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Information Management for Installation Restoration with Focus on Aberdeen Proving Ground, Maryland

by Joe D. Manous, Jr.
U.S. Army Corps of Engineers

WES

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Information Management for Installation Restoration with Focus on Aberdeen Proving Ground, Maryland

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Department of the Army
U.S. Army Corps of Engineers
Washington, DC 20314-1000

Final report

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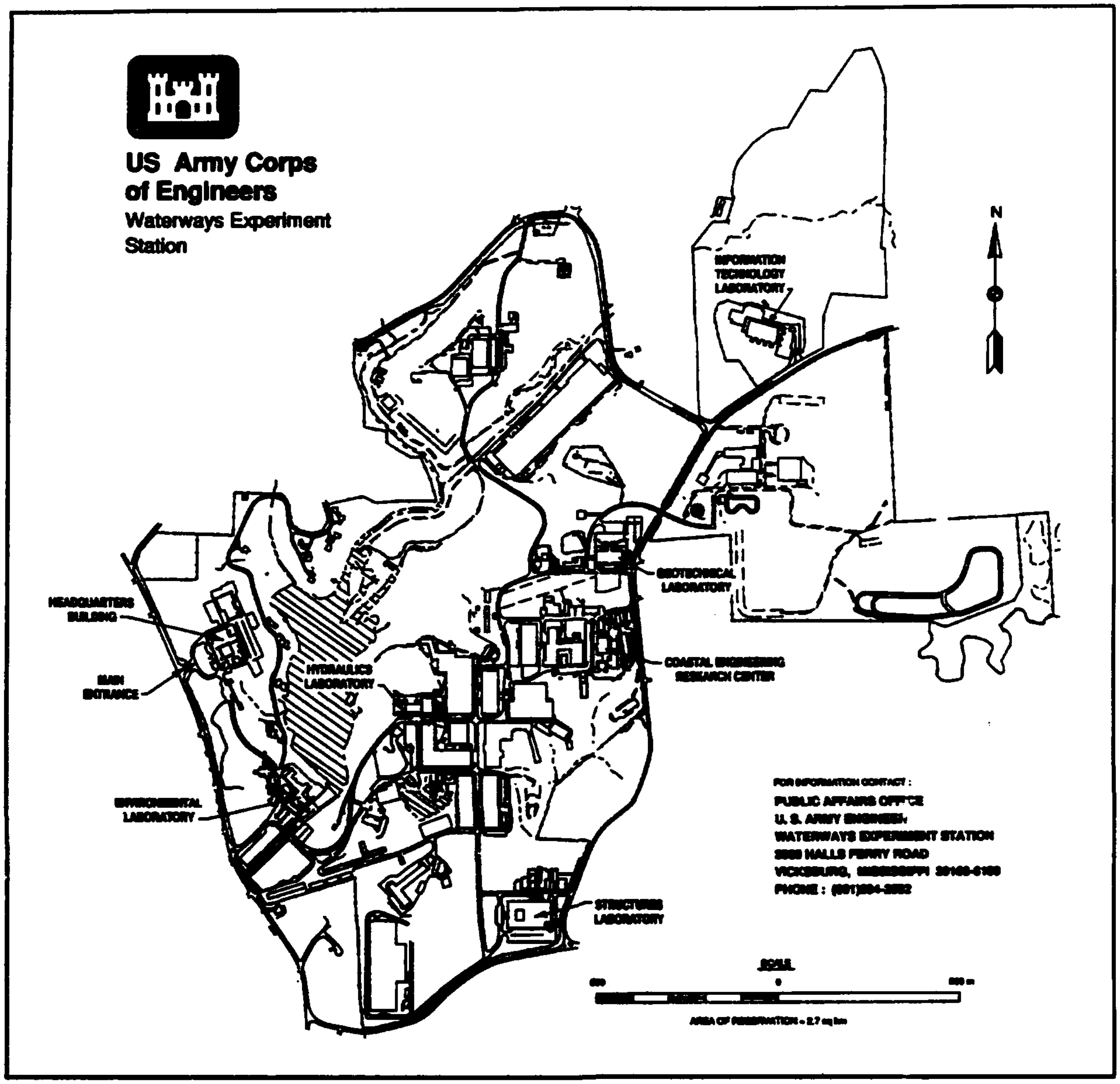

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Contents

Preface

This study was conducted as part of the U.S. Army Engineer Waterways Experiment Station (WES) preparation of work plans for the Edgewood Area of Aberdeen Proving Grounds (APG), Maryland, Installation Restoration Project and Groundwater Contamination Studies at Rocky Mountain Arsenal, Colorado, during the period 2 June 91 to 17 July 91.

The Principal Investigator and author of this report was Joe D. Manous, Jr., Major, U.S. Army Corps of Engineers. Graphics and Geographical Information System (GIS) technical support was provided by Mr. Gregory D. Comes, Earthquake Engineering and Seismology Branch (EEGD), Geotechnical Laboratory (GL-WES), and Mr. Mark Graves, Environmental Systems Division (ESD), Battlefield Environmental Group, Environmental Lab (EL-WES). Database technical support was provided by Ms. Benita Allen, Soil and Rock Mechanics Division, GL-WES and by Ms. Joann Pickett, Ms. Irene Vinsen, Ms. Laura Bremen, and Ms. Tracy Westbrook of Potomac Research, Incorporated (PRI) working under contract from the Army Environmental Center (AEC).

Direct supervision was provided by Dr. James H. May, Earthquake Engineering and Geophysics Division, EEGD, Hydrology and Site Characterization Section, GL-WES. Overall direction at WES was provided by Dr. W. F. Marcuson, III, Director, GL-WES.

At the time of publication of this report, Director of WES was Dr. Robert W. Whalin. Commander was COL Bruce K. Howard, EN.

1 Introduction

General

This study reviews and evaluates database management systems currently used for chemical and geologic data storage, retrieval, and processing. A review was also conducted of Geographic Information Systems (GIS) and their use in coordination with different database programs and data formats. In addition to review and evaluation, the study consolidated information sufficient for inexperienced user access of the systems recommended by this study.

The focus for this study is the Edgewood Area (EA), of Aberdeen Proving Grounds (APG). In addition, consideration was given concerning applicability to Aberdeen Area of APG which will be concurrently remediated. In the larger context, the system evaluations performed should prove valid with respect to similar projects not associated with APG. The establishment of a standard information system is intended to yield increased economies of analysis time and techniques, and provide customer cost savings.

Edgewood Area Project Background

EA has been the site of extensive military munitions testing and disposal for over 70 years. Onsite burial of wastes was extensive until the 1970's. Some have been removed for remediation or "safer" storage. Unfortunately, much of the buried waste has not been recovered and no collective knowledge of burial sites is available.

The remediation process will require an extensive investigative effort to locate disposal sites and determine the extent of leachate movement. Additional information will be produced as the remediation process proceeds and understanding of the subsurface becomes better developed. The cumulative result will be an enormous body of information collected over the life of the remediation project. Remediation has been investigated and conducted at RMA for a period in excess of 17 years as of this writing. Storage of information for rapid accessibility is important as a base line for comparison of contaminant locations and concentrations over time and as a source of information whose importance may not be realized during the initial data review.

Additionally, since long-term continuity of project remediation personnel is questionable, proper storage provides a means of "corporate memory" to prevent duplication of efforts. The method of storing and accessing chemical analysis and geotechnical data with the associated details of collection, handling, and analysis is the topic of this study.

Many environmentally related investigations at EA have taken place over the past 20 years. The results of these reports exist in paper copy and an assumed complete collection of these investigations is located in the offices of the EA, Director of Safety and Health (DSH). Producers of these reports include U.S. Geological Survey (USGS), Army Environmental Health Agency (AEHA), Environmental Protection Agency (EPA), WES, and private contractors. These reports are of variable usefulness and accuracy when compared with current AEC and EPA analysis standards. All reports, however, provide information useful from an investigative view point and may be the only historical records of a particular area. A portion of this information does exist in digital form in the Installation Restoration Data Management Information System (IRDMIS) operated by Army Environmental Center (AEC).

2 Databases

General

An electronic database is a means of storing information for later sorting and retrieval. Input can be generated by typing at a keyboard or through electronic transfer in a standard format such as ASCII. Output is produced as tabular data printed in hard copy or as an electronic file. Graphical interfaces for database input or output were not part of this portion of the study.

Database Requirements

The following are specific requirements for a desired level of database functionality:

a. The database must be capable of handling large volumes of raw data or records either directly or through relational processes.

b. The database should be capable of importing and exporting information electronically using standard formatting procedures and in particular ASCII.

c. The database should be capable of performing user-specified searches and sorts of data.

d. The database system should be capable of producing user-specified reports suitable for presentation.

e. Setup and operating costs should be kept to a minimum. The intent is for a single, integrated database system.

f. The database should be easy to operate and not require specialized skills or an extensive training program.

g. The database system should operate on an existing computer system to reduce initial costs. (Not a problem at WES since computer options range from XT computers to supercomputers.

The following are desirable criteria which aid in database use, but do not explicitly preclude a particular database system.

a. Predeveloped routines should be available for inexperienced users (i.e. a shell program). These routines should perform simple sorts and report production.

b. The system should be accessible by activities other than WES for information input and output. Concurrent with this criterion is the need for a database manager to oversee and maintain the database.

Discussion

During interviews with members of the EA-DSH, Baltimore District of the Corps of Engineers (a partner with WES in EA studies), the EPA, GL-WES, and EL-WES, no database system as outlined in paragraphs 7 and 8 was found in operation. Within these organizations, the most common general purpose database program was dBase.

AEC was the exception in information management. They have created a database specifically for the purpose of managing geotechnical and chemical analysis data under a program titled "Installation Restoration Data Management Information System" (IRDMIS). This program, begun in 1975, has undergone several updates as technology and database requirements have changed. The system is maintained for AEC under contract with Potomac Research, Inc. (PRI) and is physically collocated with AEC on EA, Maryland. Data from geotechnical chemical analysis and field survey results are supplied by AEC-authorized contractors and laboratories to PRI for input into the database. The system functions within a UNIX operating environment and uses Structured Query Language (SQL) as the database management format. SQL can be embedded in "C" or a proprietary formatting program called "Report-Writer" distributed by the IRDMIS computer and software manufacturer, Ingres. Both C and Report-Writer are currently available with IRDMIS.

Similar in operation to IRDMIS is a system employed at Rocky Mountain Arsenal (RMA), Colorado, by a contracted firm, D.P. Associates, Inc. That system also manufactured by Ingres is similar, but not as versatile as IRDMIS. A recent submittal by D.P. Associates has requested funding to upgrade to an IRDMIS equivalent software and hardware configuration.

RMA has used IRDMIS until 1985, but became disenchanted due to delays in processing information requests, database information integrity, duplicate entries, and data loss. Changes in hardware, software, and overall operation of IRDMIS have largely corrected the previous problems encountered by RMA. However, it is notable that even with the problems encountered with IRDMIS, RMA has chosen to stay with an IRDMIS compatible database system and continues to use AEC's Quality Assurance (QA) program.

Using the data management systems currently available to activities involved at EA, a comparison evaluation was made between dBase and IRDMIS. Through a hands-on evaluation of these programs it was found that both adequately met the outlined database requirements (paragraph 7) with neither system showing any significant advantage or disadvantage.

In the desirable criteria area (paragraph 8), however. differences were apparent. A flexible user shell is possible for both systems and an IRDMIS shell currently exists. Changes, additions, and deletions to the IRDMIS shell must be justified, routed through AEC and placed in PRI's work schedule for action. This limits responsiveness to shell changes as could be performed in a locally operated system. An operator-defined shell could be installed within a user's directory on IRDMIS, but would not be directly supported by PRI (Academic Computing Division, USMA has such a UNIX based program). It should be noted that the greatest flexibility in database use is realized by running tailored query programs and not from a standardized shell interface. Neither dBase nor IRDMIS demonstrated a significant advantage in the use of tailored query programs.

In the second desirable criteria, a significant advantage of IRDMIS was apparent. The IRDMIS was designed and is managed to permit common access by many users for input and output. A similar input and output facility could be implemented using dBase, but would require a database manager such as PRI. Such a large and long-term commitment does not seem appropriate for GL's role at EA, nor is DSH-EA prepared to implement such a large scale project at this time. It should also be remembered that AEC provides the same database system for all Department of Defense (DoD) installations. Therefore, the IRDMIS skills and techniques employed at EA could be equally applied on similar projects at other federal installations.

Services Provided with IRDMIS

Several advantages and programs are available with IRDMIS to include program oversight by AEC and the availability of a dedicated database manager. AEC has made a long-term commitment to update and maintain the IRDMIS. How long is a matter of conjecture, but current indications are for long-term support.

AEC provides a QA program for chemical analysis labs supplying information. Tests from AEC certified labs (Appendix C) are characterized based on a combination of sampling techniques, sample holding times and other variables. The test results are then coded as to their accuracy and reliability. Data falling outside AEC-established criteria, not following AEC testing procedures, or coming from a non-AEC certified lab are coded "99." Much of the pre-1985 data in the IRDMIS is coded "99" because of current higher detection and handling standards. Unfortunately, test results from EPA's standard for chemical data collection, the Toxic Chemical Leachate Program (TCLP), are also coded "99." EPA TCLP data are a common, standardized

testing procedure which can and should be incorporated in IRDMIS. An additional qualifying code could be added to the AEC coding list to indicate that the TCLP standard for chemical data collection and analysis has been followed. This inclusion should be pursued by EA-DSH and GL-WES.

In addition to chemical analysis QA, IRDMIS has a QA program for data integrity. All data submissions are reviewed by PRI to ensure that the data are properly identified and formatted. This check is concerned with qualitative entries and not with quantitative validity. An error such as omitting an installation identification code or using an undefined response would be identified as an error during the data QA check. On the other hand, a typographical error such as entering "20" instead of "200" ft[1] for sample depth would not generate an error. The purpose of this check is to ensure sufficient information is provided to uniquely identify each record and maintain a minimum information level on each record. A MS-DOS program, "PC-Tool," was written and is maintained by PRI as the mechanism for data input. This menu-driven, interacting program checks data as they are entered for compatibility with the IRDMIS system. This is the same program used by PRI upon receipt of analytical data to again check for IRDMIS compatibility.

Chemical analysis data are not the only, nor the first entry into IRDMIS. Positional data (X, Y, Z locations) of analysis sites, wells, etc must be submitted prior to chemical analysis submissions. This process assures the completeness of the database record since the positional data and chemical data are produced by different sources. The positional data are also formatted for input using the program "PC-Tool." Universal Transverse Mercatur (UTM), longitude-latitude and state planar coordinate systems are honored. A brief summary of all database record entries can be found in Appendix E and a complete description is found in the IRDMIS Data Dictionary. No QA or QC program similar to AEC's lab certification is applied to positional data.

IRDMIS is also structured to record well construction information, logging results, and groundwater elevation data. As with any database, additional information types and records can be added as required. Again, a brief summary of all database record entries can be found in Appendix E and a complete description is found in the IRDMIS Data Dictionary.

Lastly, IRDMIS provides common user access. The IRDMIS is available to any authorized user through the Defense Data Network (DDN) or by modem. Connection details can be found in Appendix D.

1 To obtain meters, multiply feet by 0.3048.

Difficulties with IRDMIS

IRDMIS provides tremendous possibilities but is far from perfect. The major difficulty is the lack of user guidance and directions. No consolidated document or organization provides single source information concerning IRDMIS. Conceptual use and QA program questions are handled by AEC while specific hardware and software questions are handled by PRI. Input validation is physically accomplished by PRI, but AEC handles QA and sampling technique questions. Passwords are obtained through AEC, but connection details are handled through PRI. The representatives of AEC and PRI were found to be prompt and helpful with specific questions, but initial use required a personal visit to AEC and PRI along with substantial trial and error. Appendix D provides a consolidation of the basic information required for first time use of IRDMIS. Unfortunately, the lack of specific user guidance from a single source is a hindrance for potential users and will limit their desire to use this system.

As already stated, the presence of a contracted database manager provides significant advantages for this system. The presence of a contractor not directly responsible to the user also presents potential work prioritization problems. Though no difficulties were observed during this evaluation, specific requests for information, assistance, or service support could be delayed if AEC's or the PRI's work priority differs from the user.

Summary

In operability and function no significant difference was found between dBase and IRDMIS. IRDMIS provides the advantage of an established system with a dedicated database manager in place. IRDMIS also provides wide access of information by all investigative activities for most DoD sites in the United States. The use of IRDMIS will relinquish some user-control over data input as compared with a local database, but this loss should have a minimal impact on overall productivity. The major shortcomings of IRDMIS are insufficient documentation and added layers of management between the user and the data.

I recommend use of IRDMIS to store GL-WES IR data. The system is not perfect, but it is established and is capable of offering significant advantages in future IR work. I further recommend that EA-DSH contract an outside firm to review the investigative and remediation reports which have been collected for the EA. The pertinent data from each report can be reduced to digital form and submitted into IRDMIS. Finally, IRDMIS training sessions through AEC and PRI are available and should be attended by prospective IRDMIS users.

3 Geographic Information Systems

General

A GIS is a means of graphically displaying land surface, geologic, chemical analysis, and so forth in a spatial or map-type format. Output is normally previewed on a computer screen with hard copy products available upon request. A GIS is capable of performing the same types of sorts and queries as a relational database though not with the ease, flexibility, or speed provided by a database program. In comparison with a database, a GIS exchanges speed of operation for graphical input and output capability. This speed trade-off can be significant, but use of mainframe computers and recent advances in personal computers (PC's) has narrowed the difference.

GIS Requirements

The following are specific requirements required to satisfy this study's GIS objectives:

a. Functions:

(1) Sort by attribute name and by use of logical operators applied to attributes.

(2) Cross-sectional development capability (i.e. groundwater or geologic profiles).

(3) Ability to distinguish, display, and plot field entries in close proximity (i.e. well clusters < 10-ft spacing).

(4) Able to print formatted output of all or selective tabular data chosen from the GIS interface.

(5) Able to plot scaled maps with a user selected grid system and user selected attributes.

(6) Able to import data using X, Y, and Z coordinates as an import data field (direct input without digitizing).

b. Compatibility with common data formats:

(1) Import and export dBase files.

(2) Import and export ASCII files.

(3) Import and export INFORMIX files.

(4) Import and export Info files.

c. Operating system:

(1) Operate adequately on a "fast" PC (preferred operating system is MS-DOS, but this is not an absolute requirement).

(2) Able to shift system to a SUN or similar work station with *minimal data conversions*.

d. Cost:

(1) Minimal cost is always a major consideration. Development is based on two independent users, EA-DSH and GL-WES--preferably using available software and hardware.

e. Training:

(1) Considerable expertise will be required for system set-up and periodic system maintenance, but it is desirable that an "inexperienced user" interface be available for viewing common sorts, map plots, and tabular report generation.

Discussion

Unlike databases, a standard GIS has not evolved in installation restoration work. EA-DSH, the Corps of Engineers Baltimore District, U.S. EPA and RMA do not currently employ a GIS. EL-WES is working in ARCInfo and GL-WES has people trained and platforms available to operate ARCInfo, CAMMS, and Intergraph. Numerous Corps of Engineers District offices use Intergraph as their GIS. GRASS is widely used on U.S. military installations around the world in conjunction with the Installation Training and Management System (ITAMS). Finally, RMA has developed an elaborate computer-aided drawing (CAD) system, which is used in conjunction with a database to produce products similar to a GIS.

The following GIS systems were considered during this study; ARCInfo, Intergraph, CAMMS and GRASS. All systems could meet the functions and compatibility requirements of paragraph 27. However, ARCInfo and Intergraph met the functions requirements with the greatest ease, and ARCInfo had a distinct advantage in compatibility over all four systems. GRASS, a raster GIS, has difficulty distinguishing features in close proximity, however, vector overlays can be produced to overcome this obstacle. CAMMS required some software improvements to meet all of the requirements in paragraph 26.

Costs of GIS's ranged from extreme to no expense. Intergraph is the most expensive since all software and hardware is proprietary. ARCInfo is moderately priced and will run on most UNIX based work stations such as a SUN or a mainframe such as a VAX. A PC version of ARCInfo is now available and operates under MS-DOS using dBase files for relational data storage. This system best operates on a "fast" PC and is upwardly compatible with work station and mainframe versions of ARCInfo. GRASS software and technical support is available at no cost from the Construction Engineering Research Laboratory (CERL). GRASS operates in a UNIX environment, normally on a work station. Finally, CAMMS GIS software and limited technical support is available at no cost from the Mobility Section, GL-WES and will run on a PC.

Current Status of GIS at APG

The EL-WES has recently completed digitizing the man-made and natural features of EA. The digitized database is a compilation of different map series over the past 40 years. This work was performed on a reimbursable basis for the EA-DSH. The project includes digitization, selection of a GIS (PC version of ARCInfo) and procurement of a hardware system to support the software. During the study period, EA-DSH was not proficient in the use of ARCInfo, but is scheduled for training by EL-WES. Upon approval of the EA work, EL-WES will begin a similar digitization of the Aberdeen Area of APG.

Until completion of EL's digitization of EA, no single map series adequately represented EA. Many of the map series used in digitization were based on single coordinate systems and required conversions between longitude-latitude, state planar, or local coordinate systems into Universal Transverse Mercatur (UTM) coordinates. The standard coordinate system for the completed GIS is UTM. The conversions along with inadequate survey control of some large scale maps have introduced an as yet undetermined error in positional representations. The GIS is generally a better source of information than previously available, but will require validation by ground survey before GIS products should be used in final IR assessments or in-depth development of IR work plans. Use of a global positioning system (GPS) would be ideal for the validation work.

Specialty Graphical Systems

CAD represents another approach in spatial information representation. CAD programs such as AutoCAD are common through Corps of Engineer activities to include GL-WES. These programs usually operate on "fast" PC's and provide, quality two-dimensional (2-D) and limited three-dimensional (3-D) mapping and graphic display capability. CAD programs are easily manipulated and are ideal for one of a kind projects. RMA has expanded on the CAD concept and developed a detailed CAD installation map which is managed by a private contractor. By using "layers" of information, similar to an acetate map overlay, details can be added to a base map. The result is a quality, scaled drawing. Unfortunately, CAD additions and deletions must be performed manually, often at considerable expense in time and money. A GIS is advantageous because it can quickly create new overlays by querying for desired features or attributes and then generating overlays internally. The advantage of GIS's increases as the areas under study become larger or more detailed. The contractor responsible for information management at RMA, DP Associates, has recently submitted a proposal for purchase of an ARCInfo system to transition RMA from CAD to GIS.

Graphic programs are another area of interest in spatial information displays. Most graphics programs are not GIS oriented, nor do they have the drawing flexibility of CAD. Many of these programs are aimed at interpolation of data sets and developing lines of equal concentrations, elevations, etc. This process, contouring, is a "best fit" process requiring the use of various polynomial and regression techniques applied in a trial and error fashion. These techniques can be used in analysis, but commonly the use is simply information exchange. The construction of 3-D graphical models can be a tremendous asset in conveying a concept or perception. In addition to plan, perspective, isometric or similar views, such programs also have cross-sectional capabilities which can be useful in displaying geologic profiles or contaminant plumes.

A graphical program available through AEC is Interactive Surface Modeling (ISM) developed by Dynamic Graphics. This program is accessed by telnet or modem on THAMA3 and THAMA6 logins. Though the program can be executed from any PC or equivalent terminal, a "graphics terminal, such as a Tectronix or PC with Tectronix emulation software, is required to view the plotted results on screen. The plots can be stored in a data file for later retrieval and local printing. Input for ISM is generated from reports written from IRDMIS. Standard reports exist in the IRDMIS IR menu, but tailored reports can also be written, as discussed in Part II of this report. Once generated, contaminant contours, groundwater elevations, etc can be plotted, contoured, and displayed in 2-D or 3-D.

A complete Iris work station with ISM is available at GL-WES. This system can be linked directly with IRDMIS by telnet to provide faster (local) compilation of data than remote access. Direct linkage of the GL-WES Iris to a plotter is also available.

Another common, PC based, graphic program is SURFER. Though not as fast nor elaborate as ISM, SURFER is a fully capable, 3-D graphics package which can display surface topography or similar information such as surface or groundwater levels. These displays can be viewed in 2-D as plan, contoured views, or in 3-D as perspective views. SURFER is commonly used in conjunction with CAD programs such as AutoCAD.

A recent development in graphical displays is VHS video presentations. WES has been working with video presentations which consist of multiple computer generated section and perspective views appended similar to frames of a cartoon. The result is a dynamic visual presentation offering dynamic views from several perspectives. A commercial firm, Z-Axis of Aurora, Colorado, produces similar videos, and can use animation technology to fill gaps between successive computer generated views. The application of animation technology is intended to reduce the number of required computer generated views and presumably lower production costs. Similar products of both animation and computer simulation can be produced at ITL-WES. These technologies are new, still developing and relatively expensive. The animation technology claims a savings in computational expense and development time, however, insufficient information was available to validate that claim in this study.

Summary

All of the GIS's or combination of CAD and database programs reviewed were capable of meeting the requirements as described in paragraph 27 (CAMMS would require some software enhancement). Since EA-DSH has already purchased an ARCInfo system and a digitized database through EL-WES, there is no technical reason for EA-DSH or GL-WES to implement a supplemental GIS. A copy of the ARCInfo database can be obtained from EL-WES. There is no cost involved with GL-WES operating the database on an existing ARCInfo platform. However, an additional user fee will be required for each copy of the PC version of ARCInfo obtained.

The use of a CAD program may be desirable for an individual investigator working at EA. However, a well maintained GIS should support most user's needs. A centralized approach to GIS will reduce effort and cost duplications, and provide each user with the same current information.

ISM is available at WES and through AEC. The incorporation of the data sets from the EA ARCInfo database was possible and was completed for buildings, roads, shorelines, wetlands and elevation contours as part of this study. Unfortunately, the ability to construct an adequate "gridding" file of the contour data does not currently exist. The "gridding" file is the first step in data interpolation required for 3-D graphic development. The developer of ISM, Dynamic Graphics, has been notified of this software shortcoming and is currently working on a solution.

IRDMIS data are compatible with the ARCInfo database. As part of this study, a copy of EA analytical and positional well data was downloaded from IRDMIS, converted to dBase format, and provided to EL-WES for incorporation in the ARCInfo data set they are creating for EA.

Finally, the owner of the GIS, EA-DSH, needs to provide a mechanism for the validation of the digitized data and correction of errors as they are discovered. In addition, multi-user access to the GIS and a method of producing user requested GIS products needs implementation. These services can be provided by a dedicated "in-house" GIS manager or through a contractor.

4 Recommendations

An installation policy needs implementing concerning the storage of IR analytical and geologic data for APG. This policy should be applicable to all IR work performed at APG. A unique database could be developed, but the collocation of AEC at APG and the experience of that organization with IRDMIS make new database development an unnecessary duplication of effort and cost. Designation of a mandatory data storage procedure by APG would require the establishment of direct and active communication between APG and AEC concerning IRDMIS. This interaction would be essential to ensure the needs of APG are met and supported.

In the absence of an installation directed policy concerning the storage of IR data, encouragement should be provided by DSH-EA for submittal of IR data produced at EA into IRDMIS. Whether specifically supportive of the APG IR program or not, IRDMIS is still the best available long-term repository of this information. IRDMIS data submission should be accomplished regardless of whether the information producer intends to access the data through IRDMIS or obtain it directly from an analysis lab. Reasons for IRDMIS submittal are two-fold. First, the data are part of an irreplaceable historical record, and second all data should be commonly available to each contractor and investigator working at APG. As the volume of acquired data increases over the next 10-15 years electronic access and retrieval will become essential to completely review all of the data produced. It is acknowledged that the use of IRDMIS will increase the cost of analysis processing and delay the return of analytical data (unless duplicate reports are requested for the user and AEC, which bypasses AEC's internal QA process). The long-term benefits, however, should outweigh these short-term costs.

When possible, utilize IRDMIS directly for data queries, retrieval, and development of data reports. The system is available and with use can be as easy to implement as dBase.

The EA ARCInfo database should be validated by ground survey and/or GPS and corrected as necessary. IRDMIS well positions within the same area should be included in the validation. This should be a short-term objective.

APG should implement a full-time GIS manager responsible for EA and Aberdeen Area. This person(s) can be in-house or contracted. The utility of a GIS is directly related to two factors. First, the data must be accurate (as

stated above) and second there must be "real time" interaction between GIS client requests and GIS output. Without the successful accomplishment of both factors, the credibility of the GIS will suffer and its full potential will not develop.

Work should continue to transfer all EA ARCInfo data into an ISM compatible format. Contact with Dynamic Graphics should be maintained concerned the transfer of the digitized ARCInfo contour data into a suitable "gridding" file. This development does not hinder the addition of contaminate data into ISM, but does limit the comparison of such data with respect to the topographic surface.

APG should instigate changes through AEC concerning the incorporation of TCLP data into the IRDMIS. If the required data standard for EA remains TCLP analysis, then consideration for coding this information should be provided within IRDMIS.

EA-DSH should reduce the on-hand hard copy reports of investigative and remediation work at EA into a digital format for incorporation in IRDMIS. This work can be accomplished in-house or by contract. The information may not be of litigation quality but is an important source of historical and investigative information if placed in a format conducive to rapid query and retrieval.

Appendix A
Abbreviations

AA	Aberdeen Area, Aberdeen Proving Grounds, MD
AEC	Army Environmental Center
AEHA	Army Environmental Health Agency
APG	Aberdeen Proving Grounds, MD
ASCII	American Standard Code Information Exchange
CAD	Computer Aided Drawing
CLP	Chemical Leachate Program
DSH	Director of Safety and Health, EA APG
EA	Edgewood Area, Aberdeen Proving Grounds, MD
EL-WES	Environmental Laboratory, Waterways Experiment Station
EPA	U.S. Environmental Protection Agency
GL-WES	Geotechnical Laboratory, Waterways Experiment Station
IR	Installation Restoration
IRDMIS	Installation Restoration Data Management Information System
ISM	Interactive Surface Modeling computer program
ITL-WES	Information Technology Laboratory, Waterways Experiment Station
PRI	Potomac Research, Incorporated
QS	Quality Assurance

QC	Quality Control
RMA	Rocky Mountain Arsenal, CO
USGS	U.S. Geological Survey
WES	Waterways Experiment Station, Vicksburg, MS

Appendix B
Addresses and Points of Contact

1. Dynamic Graphics - Address: Dynamic Graphic, Inc.
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Regional Manager
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6. AEC - Mailing Address:

USAEC
ATTN:
Aberdeen Proving Grounds,
MD 21010-5401

Edgewood Area, APG Data Management Supervisor
Ms. Roxann Moran, (301) 671-1544, FAX (301) 671-1548

AEC Chemistry Branch, EA Project Officer
Mr. Doug Stevenson, (301) 671-3348

AEC Geological Branch (Also past use of ISM with IRDMIS)
Mr. Ira May, (301) 671-1516

7. WES - Mailing Address:

USAE-WES
ATTN: CEWES- - (Name)
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Report Supervisor, GL (CEWES-GG-YH)
Dr. James H. May, (601) 634-3395, FAX (601) 634-3453/3139

Silicon Graphics Use, GL (CEWES-GG-H)
Mr. Gregory D. Comes, (601) 634-3395, FAX (601) 634-3453/3139

ARCInfo based GIS Production of APG, EL (CEWES-EN-B)
Mr. Mark Graves, (601) 634-3395

8. Z-Axis Corporation: (Video Graphic Production)

Z-Axis
10800 E. Bethany Drive
Suite 500
Aurora, CO 80014

Vice-Present
Mr. Raymond C. Hauschel, (303) 696-9608, FAX (303) 696-0857

9. Study Investigator:

CPT Joe Manous
Department of Geography and
Environment Engineering
United States Military Academy
West Point, NY 10996

(914) 938-2472, FAX (914) 938-4175

Appendix C
Current AEC Certified Labs

Arthur D. Little, Inc.

California Analytical Laboratory, Sacramento, CA

Environmental Science and Engineering, Denver, CO

Environmental Testing and Certification, Edison, NJ

EA Engineering Science and Technology

Interpoll, Inc., Circle Pines, MN

International Technologies Corp., Knoxville, TN

Midwest Research Institute, Kansas City, MO

Pace Laboratories, Inc., Minneapolis, MN

Rocky Mountain Analytical Laboratory, Arvada, CO

Rocky Mountain Arsenal Laboratory

Datachem (Utah Biomedical Testing Laboratory)

Roy F. Weston, Lionville, PA

Roy F. Weston, Stockton, CA

Radian Corporation

VERSAR

NOTE: Some labs are not certified for the full range of AEC specified procedures.

Appendix D
IRDMIS General Information

IRDMIS (Installation Restoration Data Management Information System) is the current product of a 15-yr effort by AEC to develop a data management system. IRDMIS is currently managed by a contractor, Potomic Research Institute (PRI). PRI and AEC are collocated at Edgewood Area, APG (See Appendix B for POC's).

IRDMIS is a relational database operating on a Pyramid computer within a UNIX operating system. The database is a product of the Ingres Corporation and software support to included programming manuals is provided through that firm (See Appendix B).

IRDMIS can be accessed by either telnet or modem.

a. The telnet and FTP address for the "THAMA1" system is 131.92.80.11

b. IRDMIS can be reached by modem using VT-100 emulation at:

(301) 671-4550, 300-2400 baud Hayes compatible
(301) 671-4650, 300-1200 baud Hayes compatible
(301) 671-4750, 9600 baud Telcor

All modem connections must be made initially as a subscriber to THAMA1.

(1) Crosstalk communications software use: Even Parity; 8 Data Bits; 1 Stop Bit

(2) Procomm communications software use: Even Parity; 7 Data Bits; 1 Stop Bit

c. Connection to other THAMAx systems can be made by telnet from THAMA1 by using "telnet THAMAx," where "x" is the name of the system being connected.

d. THAMA1 and THAMA3 permit access to the IR database. THAMA3 also provides access to the ISM program developed by Dynamic Graphics. Each THAMAx system requires a separate login and password.

Logins are obtained through the AEC area representative. For EA, the representative is Ms. Roxann Moran (See Appendix B). A login application form is available in Enclosure 1. Access to more than one THAMAx system must be annotated separately on the application.

Upon login, a menu of available report formats can be displayed by typing "IR" {return}. The Installation Remediation Menu of report formats will be displayed. These reports, used in conjunction with the IRDMIS data dictionary, are relatively easy to manipulate but are inflexible in their structure of queries and output. Greater flexibility can be obtained by writing specific queries in the system's database language, SQL (Structured Query Language). To implement SQL, the SQL code must be imbedded in another programming language such as C or FORTRAN. Provided by Ingres is an executable and formatting code called "Report-Writer." Report-Writer is similar to FORTRAN in usage.

IRDMIS data management is broken into three levels.

a. Level 1 data - Input data provided from a lab or other source. Analytical data which meet AEC certification must be analyzed and submitted from a AEC certified lab (Appendix B). Survey and positional data (required for each analytical submission) are provided by the crew obtaining the sample or an independent survey crew. In all cases, the data are placed into the appropriate digital format by the submitter using "PC Tool" or other programs which produces output compatible with PC Tool. PC Tool was produced and is maintained by PRI. Submission of analytical data not meeting AEC certification (including EPA TCLP) requires direct coordination with the local AEC data management supervisor.

b. Level 2 data - Data processing within the IRDMIS system. End users have no interaction with this data level.

c. Level 3 data - Output data which are accessible using SQL. Details of codes, record names, tables etc. are available in the IRDMIS data dictionary. A condensed version of the data dictionary is available in Appendix E.

A PC program called "PC Link" is available to connect a PC with an Ingres database. PC Link permits direct conversion of database information into other data format types such as dBase or Lotus. PC Link is available from the Ingres Corporation.

Interactive Surface Modeling (ISM) is a software program developed by Dynamic Graphics. This program is available for remote use on the THAMA3 and THAMA6 logins. Input for ISM can be generated from

standard query reports available from the IR User Menu or tailored query reports generated with SQL. The input format is ASCII. ISM provides spatial plotting capability for the tabular data generated from the IR database. The data can be contoured and/or displayed in 3-D perspective presentations. The results can be viewed on screen or sent to a hard copy printing device using HPGL graphic output. Viewing on screen requires a graphic terminal such as an Iris work station, Tectronix terminal, or use of a graphic terminal emulation package on a PC. One possible emulation package is marked by Graphpoint, Inc. In addition to plotted data, annotation files (roads, elevation contours, water, etc) can be produced to enhance the visual interpretation of the plotted data. Annotation files are not part of the contouring or 3-D development and are used only for presentation enhancement.

Documentation available concerning the use of IRDMIS and associated utilities is as follows:

a. Ingres/Reports: Report-Writer Reference Manual, release 6.3, November 1989.

Available from: Ingres Corp. Cost: $25.00

GSA Contract GS00K91AGS5822

b. Ingres/SQL Reference Manual

Available from: Ingres Corp. Cost: $55.00

GSA Contract GS00K91AGS5822

c. USATHAMA Quality Assurance Program, USATHAMA PAM 11-41, January 1990.

Available from: AEC Cost: No Charge

d. USATHAMA User's Guide, produced by PRI, November 1989.

Available from: AEC Cost: No Charge

e. THAMA User's Manual, PC Data Entry and Validation Subsystem (IRDMIS PC Tool), version 4.2, produced by PRI, April 1991.

Available from: AEC Cost: No Charge

f. PC Tool Software, version 4.2, produced by PRI.

Available from: AEC Cost: No Charge

g. THAMA User's Manual, Data Dictionary, version 1991.2, produced by PRI, April 1991.

Available from: AEC | Cost: No Charge

h. PC Link Software

Available from: Ingres Corp. | Cost: $130.00

GSA Contract GS00K91AGS5822

i. Grafpoint Emulation Software

Available from: Grafpoint, Inc | Cost: $746.25

GSA Contract GS00K90AG55259PS01

Appendix E
Condensed IRDMIS Data Dictionary

Pages E-2 and E-3 contain a two-page summary of key level 3 data record descriptions contained in IRDMIS. This summary is sufficient for the beginning user to extract information from IRDMIS using either the existing IR MENU or tailored queries using SQL. See the IRDMIS Data Dictionary for a detailed listing of IRDMIS data record descriptions.

Page E-4 is a current listing of data tables contained in IRDMIS. Also annotated are field names contained in each table and the key fields required for relating different tables during queries.

Page E-5 through E-35 contain a selected extract of the IRDMIS Data Dictionary.

The complete IRDMIS Data Dictionary is available through AEC. See Appendix D for details.

CODE SUMMARY SHEET

for
The Installation Restoration Data Management Information System (IRDMIS)
System Owner - Toxic and Hazardous Materials Agency (THAMA)
System Operator - Potomac Research, Inc (PRI)

1. **Installation Code** (inst) - Identifies installation from which the data were collected.

Common Examples:
AA = Aberdeen Area, Aberdeen Proving Ground, Md
CR = Crane Naval Weapons Support Center, IN
EA = Edgewood Area, Aberdeen Proving Ground, Md
RK = Rocky Mountain Arsenal, CO (data after 1984)
RM = Rocky Mountain Arsenal

2. **File Type** or Media Type (media_type) - Code identifying the type of data.

Common Examples: (Currently the only terms in use)
CGW = Chemical Ground Water
CSW = Chemical Surface Water
CSE = Chemical Sediment
CSO = Chemical Soil

3. **Site Type** (site_type) - Represents a type of landmark, feature or construction.

Common Examples:

FBLK = Field Blank	WELD = Dry Well
FELD = Field	WELL = Completed Well
SPTK = Septic Tank	PLUG = Shovel Sample
SUMP = Sump	BORE = Bore Hole

4. **Depth** (depth) - Depth to the nearest foot from the topographic surface to the interval being sampled. [-9999.0 is used to indicate no data was recorded, since an entry of 0 is possible. Well locations (x, y, & z coordinates) are relative to a local datum].

5. **Sample Date** (samp_date) - Date sample was taken in the field. The date of actual testing of the sample (anly_date) is also available.

6. **Analysis Type** (anly_type) - Code representing the certification level of the analysis.

Common Examples: C1, 1A, 1B, & C2 can all indicate a competent analysis level. (see data dictionary for details)

00 = Analytes not requiring certification
99 = Quality level of analysis unknown or very poor

7. **Analysis Accuracy** (anly_acc) - Decimal number representing the standard error of the best-fit linear regression line of Found vs Target values for QC standard additions data.

8. **Value** (value) - Numerical value of analysis result (6 digit floating decimal precision).

Prepared by CPT Joe Manous for GL-WES 27 Jun 91

9. **<u>Measurement Boolean</u>** (meas_bool) - Indicator that a measured quantity is not within the certified range, or that the test used does not yield quantitative results.

Common Examples:
- EQ = Equal to certified reporting or detection limit
- LT = < Certified reporting or detection limit.
- GT = > Certified reporting or detection limit.
- blank = Within acceptable range.
- ND = Not Detectable.

10. **<u>Unit of Measurement</u>** (unit_meas) - Units of measured value.

Common Examples:
- UGL = micrograms/liter
- UGG = micrograms/gram
- PPM = parts/million

11. **<u>Flagging Code</u>** (i_s_c) - Code to indicate other-than-usual conditions or results.

Common Examples:
- D = Duplicate sample or test name.
- E = Element run with background corrections.
- H = Out of control, but data accepted due to high recoveries.
- blank = No special conditions apply to the results.

12. **<u>Prime Contractor</u>** (lab_prime) - Organization conducting or orchestrating a given data collection action.

Common Examples:
- AL = Arthur D. Little
- TH = THAMA
- AH = Army Environmental Hygiene Agency (AEHA)
- GS = US Geological Survey
- WE = WES

13. **<u>Test Name</u>** (analyte) - Parameter being measured.

Common Examples:

11DCE	= 1,1-Dichloroethylene	HG	= Mercury
111TCE	= 1,1,1-Trichloroethane	MEXCLR	= Methoxychlor
12DCLE	= 1,2-Dichloroethane	NO3	= Nitrate
AS	= Arsenic	PCB1016	= PCB 1016 (etc)
C6H6	= Benzine	PH	= pH
CD	= Cadmium	SE	= Selenium
CMONOX	= Carbon Tetrachloride	AG	= Silver
CLDEN	= Chloride	STYR	= Styrene
CR	= Chromium	SO4	= Sulfate
CU	= Copper	MEC6H5	= Toluene
ENDRN	= Endrin	TXPHEN	= Toxaphene
FE	= Iron	TRCLE	= Trichloroethylene
PB	= Lead	C2H3CL	= Vinyl Chloride
LIN	= Lindane	XYLEN	= Xylenes
MN	= Manganese	ZN	= Zinc

LEVEL 3 FILE FORMATS

IRDMIS Level 3 Data Record Tables

installation

inst (1) c6 Installation Code 9.11	inst_name c30 Installation Name 11.04	utm_zn i4 UTM Zone 11.10	min_x i4 Minimum X UTM Coordinate 11.08	max_x i6 Maximum X UTM Coordinate 11.07	min_y i6 Minimum Y UTM Coordinate 11.10
max_y i6 Maximum Y UTM Coordinate 11.08	quad c1 Quadrangle 11.13	h_km c8 Hundred Kilometer Square 11.05	stp_zn i2 State Plane Zone 11.10	lat c1 Hemisphere Latitude 11.01	lng c1 Hemisphere Longitude 11.02
proj_type c3 Projection Type 11.12	mod_type c4 Module Type 11.11				

chem

inst (1)(*1) c6 Installation Code 8.11	media_type (2) c3 File Type 8.09	site_type (3) c4 Site Type 8.17	site_id (4) c10 Site Identification 8.16	test_nm (5) c6 Test Name 8.24	lab_prime c6 Prime Contractor 8.15
lab (*2) c3 Laboratory 8.10	samp_date date Sample Date 8.10	lot (*3) c3 Lot 8.11	sample_no c6 Sample Number 8.20	rec_id (*4) i4 Record Identification 8.16	prgrm c6 Sample Program 8.22
meth c4 Method Number 8.13	tech c1 Sample Technique 8.23	f_l_s c1 Flagging Code 8.09	depth f6 Depth 8.05	value f Value 8.20	unit_meas c4 Unit of Measurement 8.10
meas_bool c2 Measurement Boolean 8.12	base_close c1 Base Closure 9.02	class_ind c1 Class Indicator 8.04	trans_date i4 Transfer Date		

chem2

rec_id (1) i4 Record Identification 8.16	f_sample_no c6 Field Sample Number 8.07	prep_date date Sample Preparation Date 8.21	anly_date date Analysis Date 8.02	lab_anly_no c6 Laboratory Analysis Number 8.10	anly_acc f6 Analysis Accuracy 8.01
unc_value f6 Uncorrected Value 8.25	dil_fact f Dilution Factor 8.05	pct_moist f4 Moisture 8.14	anly_type c2 Analysis Type 8.03	initials c3 Initials 8.10	

sample_loc

inst (1) c6 Installation Code 9.11	site_type (2) c4 Site Type 8.17	site_id (3) c10 Site Identification 8.16	ptr_type c4 Pointer Site Type 8.14	base_no c10 Pointer Site Identification 8.16	aq_name c8 Aquifer Name 9.01
x_loc i4 X Coordinate 9.20	y_loc i4 Y Coordinate 8.21	xy_acc c2 Coordinate Accuracy Code 8.03	z_loc f4 Surface Elevation 8.16	z_acc c2 Elevation Accuracy Code 8.03	description c16 Description 8.07
base_close c1 Base Closure Indicator 9.02	seq_no i2 Coordinate Pair Number 8.04				

ggs

inst (1)(*1) c6 Installation Code 8.11	site_type (2) c4 Site Type 8.17	site_id (3) c10 Site Identification 8.16	meas_date (4)(*2) date Measurement Date 10.07	depth f6 Depth (Geotechnical) 10.03	org c3 Organization 10.09
lab_prime c3 Prime Contractor 8.15	file_id c8 File Identification 10.05				

gwc

inst (1) c6 Installation Code 8.11	site_type (2) c4 Site Type 8.17	site_id (3) c10 Site Identification 8.16	meas_date date Measurement Date 10.07	depth f6 Depth (Geotechnical) 10.03	interval f4 Interval Thickness 10.08
action_meas (4) c6 Action or Measurement 10.01	value f Value (Geotechnical) 10.10	unit_meas c4 Unit of Measurement 8.10	entry c2 Entry 10.04	meth c4 Method Number (Geotechnical) 10.03	org c3 Organization 10.09
lab_prime c3 Prime Contractor 8.15	initials c3 Initials 8.10	file_id c8 File Identification 10.05			

cqc

inst (1) c6 Installation Code 8.11	media_type c3 File Type 8.09	qc_type c4 QC Type 8.17	samp_type c1 QC Test Code 8.16	spike f QC Spike 8.15	test_nm (2) c6 Test Name 8.24
lab_prime c3 Prime Contractor 8.15	lab (3) c3 Laboratory 8.09	samp_date date Sample Date 8.20	lot (4) c3 Lot 8.11	sample_no (5) c6 Sample Number 8.20	prgrm c6 Sample Program 8.22
meth c4 Method Number 8.13	tech c1 Sample Technique 8.23	f_l_s c1 Flagging Code 8.09	depth f6 Depth 8.05	value f Value 8.20	unit_meas c4 Unit of Measurement 8.10
meas_bool c2 Measurement Boolean 8.12	f_sample_no c6 Field Sample Number 8.07	prep_date date Sample Preparation Date 8.21	anly_date date Analysis Date 8.02	lab_anly_no c6 Laboratory Analysis Number 8.10	anly_acc f6 Analysis Accuracy 8.01
unc_value f Uncorrected Value 8.25	dil_fact f Dilution Factor 8.05	pct_moist f4 Moisture 8.14	anly_type c2 Analysis Type 8.03	base_close c1 Base Closure 9.02	class_ind c1 Class Indicator 8.04
initials c3 Initials 8.10	trans_date i4 Transfer Date				

gfd

inst (1) c6 Installation Code 8.11	site_id (2) c10 Site Identification 8.16	meas_date date Measurement Date 10.07	depth f6 Depth 10.03	interval f4 Interval Thickness 10.08	action_meas (3) c6 Action or Measurement 10.01
value f Value 10.10	unit_meas c4 Unit of Measurement 8.10	entry c2 Entry 10.04	meth c4 Method Number 10.03	org c3 Organization 10.09	lab_prime c3 Prime Contractor
initials c3 Initials 8.10	file_id c8 File Identification 10.05				

lvl2_log

inst (1) c6 Installation Code 8.11	lab (2) c3 Laboratory 8.09	lot (3) c3 Lot 8.11	media_type (4) c3 File Type 8.09	chmst_file c14 Chemist File 11.15	tech_date date Transfer Date
load_date date Load Date 11.03	recs_read i4 Records Read 11.14	last_recid i4 Last Record Identification 11.09	submit_no i4 Submission Number 11.17		

LEGEND

(x) - Key Field (*x) - Secondary Indices c - character i - integer f - float date - date field

1 April 1991

ELEMENT IS USED IN THE FOLLOWING IR RECORDS AND DATA BASE TABLES

Level 1 Record	Level 1 Column(s)	Level 2 Record	Level 2 Column(s)	Level 3 Table(s)	Level 3 DB Column
*Lot	2-3	*SCC(all)	1-2	[illegible]	inst
*Field Drilling	1-2	*SCSPD	1-2	gfd	inst
*Groundwater Stabilized	1-2	*SCGGS	1-2	ggs	inst
*Well Construction	1-2	*SCGWC	1-2	gwc	inst
*Map		*SGGMA	1-2	sample_loc	inst
				**installation	inst
				***well_log	inst

*Included in file name
**Manual keyboard entry in Level-3 data base by Contract Site
***Entry created and updated by data base load and file delete programs

ELEMENT SIZE AND CHARACTERISTICS:

5 alphanumeric characters, left justified. Only the first two characters are presently defined.

ELEMENT DESCRIPTION:

Code identifying the name of the installation from which data is being collected.

ACCEPTABLE CRITERIA:

- Required in File Name and in records indicated above

ACCEPTABLE ENTRIES:

(Listed alphabetically by Installation Code; see also 11.04 Installation Name)

1A 1st Army Recreation Area, Lewes, DE
A9 AMSA 9 US Army Reserve
AA Aberdeen Area, Aberdeen Proving Ground, MD
AC Ammunition Center & School
AD Fort Amador, Panama
AF US Army Fuels and Lubricant Research Facility
AH Arlington Hall Station, VA
AL Alabama AAP, AL
AM Army Material Technology Lab, MA
AN Anniston AD, AL
AO USA AFA 4901A Orlando, FL
AP Nike, Aberdeen Proving Ground, MD

ACCEPTABLE ENTRIES: (Cont.)

AR Armament Munitions Chemical Command
AS US Army Safeguard CMD PAR Mountain ND
AT USARC, Asheville, NC
BA Badger AAP, WI
BC Training, Battle Creek, MI
BD USARC, Brevard, NC
BE Fort Benning, GA
BG Blue Grass Area, Lexington-Blue Grass DA, KY
BH Fort Benjamin Harrison, IN
BK Fort Baker
BL Fort Bliss, TX
BM USA Bellmore Maintenance
BN Bennett Army National Guard Facility, CO
BP Blossom Point Ordnance Works, MD
BR Brooklyn Military Ocean Terminal
BT Fed Regional Center Bothell, Bothell, WA
BU Fort Buchanan, PR
BV Fort Belvoir, VA
BY Bayonne Military Ocean Terminal, NJ
C1 Family Housing Plainville, CT
C2 Family Housing Fairfield, CT
C3 Family Housing Windsor, CT
C4 Family Housing Ansonia, CT
C5 Family Housing Middletown, CT
C6 Family Housing Orange, CT
C7 Family Housing Portland, CT
CA Carlisle Barracks
CB Camp Bullis
CC Corpus Christi AD, TX
CD Columbus Defense Construction Supply Center
CE Cold Regions Research & Engineering Laboratory, NH
CF Fort Chaffee
CH Charleston Army DA
CL Family Housing PITT 42 Elizabeth, PA
CM Cameron Station, VA
CN Fort Carson, CO
CO Cornhusker AAP, NE
CP Camp Parks, Livermore, CA
CR Crane Naval Weapons Support Center, IN
CS Camp Sims
CT Fort Clayton
CV Crane Army Ammunition Activity

ACCEPTABLE ENTRIES: (Cont.)

CX Coosa River Annex, AL
CY Canyon Lake Recreation Area, New Braunfels, TX
DA Detroit Arsenal, MI
DE Fort Des Moines, IA
DF Defense Mapping Agency, VA
DI Defense Ind Plant Equip Fac, Atchison, KS
DM Microwave Station Damascus, Frederick, MD
DO Fort Douglas, UT
DR Fort Drum, NY
DT Fort Detrick, MD
DU Dugway Proving Ground, UT
DV Fort Devens, MA
DX Fort Dix, NJ
EA Edgewood Area, Aberdeen Proving Ground, MD
EP Engineer Proving Ground, Fort Belvoir, VA
ET Ethan Allen Firing Range, VT
EU Fort Eustis, VA
FA Frankford Arsenal, PA
FB Fort Bragg, NC
FC Fort Campbell, KY
FD Fort DeRussy
FL Fort Monmouth, Evans Area, NJ
FG Fort Gillem, GA
FH Fort Hood, TX
FI Fitzsimons General Hospital
FJ Fort Jackson, SC
FK Fort Kobbe
FM Fort Monroe, VA
FN Fort Allen
FO Fort Ord, CA
FR US Army Forward Supp Ctr, Mt. Clemens, MI
FS Fort Story, VA
FT Fort Totten
FW Fort Wingate DA, NM
GA Gaithersburg Nike (Fort Meade), MD
GG Cape St. George, FL
GM USA AMSA 47G/Miami, FL
GO Fort Gordon, GA
GR Fort Greely, AK
GT Gerstle River Test Site, AK
GU Fort Gulick
GW Gateway AAP

ACCEPTABLE ENTRIES: (Cont.)

H1 Family Housing Hull MA 36
H2 USARC Hickory, NC
H3 Hunter Ils Middle Marker, Savannah, GA
HA Hawthorne AAP, NV
HB Fort Holabird, MD
HD Harry Diamond Laboratories
HE Helemano Military Reservation
HG HG Rad Santa Rosa, Paso Robles, CA
HI Fort A. P. Hill, VA
HL Fort Hunter Liggett, CA
HM Fort Hamilton
HN Fort Hancock
HO Holston AAP, TN
HS Fort Hays
HT Hamilton Army Airfield, CA
HU Fort Huachuca, AZ
HY Hays AAP, PA
I1 Family Housing USARC Addison, IL
I2 Family Housing Worth, IL
IA Iowa AAP, IA
IG Fort Indiantown Gap, PA
IN Indiana AAP, IN
IR Fort Irwin
IW Irwin Support Det Annex, McKeesport, PA
J1 Family Housing NIKE Phila 41/43 Clementon, NJ
J2 Family Housing NIKE NY 79 80 Livingston, NJ
J3 Family Housing NIKE NY 93 94 Ft. Lakes, NJ
J4 Family Housing NIKE NY 60 Old Bridge, NJ
J5 Family Housing NIKE NY 54 Holmdel, NJ
JB Jefferson Barracks LDF
JF Jefferson Proving Ground, IN
JO Joliet AAP, IL
KA Kansas AAP, KS
KB Kings Bay Military Ocean Terminal
KC Nike Kansas City 30, MO
KP Kapalama Military Reservation, HI
KX Fort Knox, KY
LA Lowndale AAP
LB Liberty Dam, Baltimore, MD
LC Lake City AAP, MO
LD Fort Leonard Wood, MO
LE Fort Lee, VA

ACCEPTABLE ENTRIES (Cont.)

LH	Longhorn AAP, TX
LI	Lima Army Modification Center
LK	Letterkenny AD, PA
LL	Lake Lawson North Gully Site 1
LN	Lincoln Support Facility, Smithfield, RI
LO	Louisiana AAP, LA
LS	Lone Star AAP, TX
LT	Fort Lawton
LU	USARC, Lumberton, NC
LV	Fort Leavenworth, KS
LW	Fort Lewis, WA
LX	Lexington Area, Lexington-Blue Grass DA, KY
M1	Family Housing Topsfield, MA
M2	Family Housing Randolph, MA
M3	Family Housing Beverly, MA
M4	Family Housing Wakefield, MA
M5	Family Housing Burlington, MA
M6	Family Housing Bedford, MA
M7	Family Housing Swansea, MA
M8	Family Housing NIKE Wash Balt 35 Croom, MD
M9	Family Housing SLASC Wherry, MO
MA	Family Housing Manchester CT 25
MC	Fort McClellan, AL
MD	Fort Meade, MD
ME	Memphis Defense Depot
MH	Michigan AAP
MI	Milan AAP, TN
ML	McAlester AAP, OK
MM	Fort Monmouth Main Post, NJ
MN	Fort McNair
MO	Family Housing Milford CT 17
MP	Fort McPherson, GA
MR	Fort Myer
MS	Mississippi AAP, MS
MT	Fort MacArthur
MU	Fort Missoula, Fort Missoula, MT
MV	Materiel Development and Readiness
MW	Manitowoc AD, WI
MY	Fort McCoy, WI
MZ	Maine Army Depot
NA	Navajo AD, AZ
NB	Family Housing New Britain CT 57

ACCEPTABLE ENTRIES (Cont.)

NC	New Cumberland AD, PA
NH	Family Housing Nahant MA 17
NI	Nicholson Stanley R SFC RSC 1
NK	Natick RD&E, MA
NP	Newport AAP, IN
NT	New Orleans Military Ocean Terminal, LA
NV	SFC NV Britton USAR Center
OD	Oakdale Support Center
OG	Ogden Defense Depot, UT
OK	Oakdale Army Base
P1	Family Housing PITT 03 Dorseyville, PA
P2	Family Housing PITT 37 Hermanie, PA
P3	Family Housing PITT 02 Rural Ridge, PA
P4	Family Housing Irwin SPT DET ANX, PA
P5	Family Housing PITT 25 Monroeville, PA
P6	Family Housing PITT 52 Finleyville, PA
P7	Family Housing Coraopolis 71 (PI 71L), PA
P8	Family Housing Coraopolis 72 (PI 71C), PA
P9	Family Housing PITT 43 Elrama, PA
PB	Pine Bluff Arsenal, AR
PD	Phosphate Development Works, AL
PH	Philadelphia Defense Personnel Support Center, PA
PI	Picatinny Arsenal, NJ
PK	Fort Pickett, VA
PL	Fort Polk, LA
PM	Presidio of Monterey, CA
PN	Pontiac Storage Facility, MI
PS	Presidio of San Francisco, CA
PU	Pueblo DA, CO
PX	Phoenix Military Reservation, MD
QH	Quarry Heights
R1	Family Housing Davisville, RI
R2	Family Housing N Smithfield, RI
RA	Redstone Arsenal, AL
RB	Riverbank AAP, CA
RC	Richmond Defense General Supply Center
RD	Radford AAP, VA
RH	Fort Ritchie
RI	Rock Island Arsenal, IL
RK	Rocky Mountain Arsenal, CO (data after 1984)
RM	Rocky Mountain Arsenal, CO
RR	Red River AD, TX

ACCEPTABLE ENTRIES: (Cont.)

RS	Fort Richardson & Eagle River Flats, AK
RT	Roosevelt ASARC
RU	Fort Rucker, AL
RV	Ravenna AAP, OH
RY	Fort Riley, KS
S1	Stewart Annex, Newburgh, NY
S2	Family Housing Shelton CT 74
SA	Sierra AD, CA
SB	Schofield Barracks, HI
SC	Sacramento AD, CA
SD	Sudbury Annex, MA
SE	Seneca AD, NY
SF	Sunflower AAP, KS
SG	Saginaw Army Aircraft Plant
SH	Sharpe AD, CA
SI	Fort Sill, OK
SJ	Stratford Army Engine Plant, CT
SL	St. Louis Ordnance Plant & AAP, MO
SM	Fort Sam Houston, TX
SN	Fort Sheridan, IL
SO	Sat Com, Paso Robles, CA
SP	Sunny Point Military Ocean Terminal
SR	Scranton AAP, PA
SS	St. Louis Area Support Center, MO
ST	Fort Shafter
SU	Suitland Microwave Tower, Suitland, MD
SV	Savanna AD, IL
SW	Fort Stewart, GA
SY	Snyder ASAR Center
SZ	Search USARC
TA	Taranto
TC	Twin Cities AAP, MN
TF	Taranto Support Activity - Selfridge
TH	Tarheel AAP, NC
TI	Fort Tilden
TM	USARC Taft McCoy 02
TN	Tooele AD, UT (North area)
TO	Tacony Warehouse, PA
TP	Tripler Army Medical Center
TR	Tracy DP
TS	Tooele AD, UT (South area)
TT	Tropic Test Center

ACCEPTABLE ENTRIES: (Cont.)

TW	Twin Cities AAP, MN (data before 1986)
TY	Tobyhanna AD, PA
UA	US Soldiers and Airmens Home
UC	US Army Corpus Christi
UH	US Army Houston Armed Forces Center
UM	Umatilla AD, OR
US	US Military Academy, West Point, NY
UT	USARC Tampa 4815 W, FL
V1	Family Housing Woodbridge, VA
V2	Family Housing NIKE Norfolk 85 P. Henry, VA
V3	Family Housing Manassas, VA
VC	Vancouver Barracks, Vancouver, WA
VF	Valley Forge General Hospital, PA
VH	Vint Hill Farms Station, VA
VL	Various Locations
VN	Van Nuys Maintenance Shop, Los Angeles, CA
VO	Volunteer AAP, TN
W1	Family Housing Midway Family Housing, WA
W2	Family Housing Youngs Lake, WA
W3	Family Housing Sun Prairie, WI
WA	Watervliet Arsenal, NY
WB	Woodbridge Research Facility, VA
WI	White Sands Missile Range, NM
WL	USARC, Wilson, NC
WN	Fort Wainwright, AK
WP	Family Housing Westport CT 73
WR	Walter Reed Medical Center, DC
WS	Weldon Spring Chemical Plant & Training Area, MO
WT	Warrenton Training Center
WV	West Virginia Ordnance Works, WV
WW	Fort Wadsworth
Y1	Family Housing Manhattan Beach, NY
Y2	Family Housing NIKE NY 01 Tappan, NY
Y3	Family Housing NIKE NY 25 Rocky Point, NY
Y4	Family Housing Dry Hill, NY
Y5	Family Housing NIKE NY 99 Spring Valley, NY
YK	Yakima Firing Center
YU	Yuma Proving Ground, AZ

ELEMENT IS USED IN THE FOLLOWING IR RECORD AND DATA BASE TABLES

Level 1 Record	Level 1 Column(s)	Level 2 Record	Level 2 Column(s)	Level 3 Table(s)	Level 3 DB Column
				***[illegible]	[illegible]
Sample	9-7	*[illegible]	9-7	[illegible]	[illegible]
Field Drilling	*	*[illegible]	9-7	**[illegible]	
Groundwater Stabilized	*	*[illegible]	9-7	**[illegible]	
Well Construction	*	*[illegible]	9-7	**[illegible]	
Map	*	*[illegible]	9-7	**[illegible]	

* [illegible]
** [illegible]
*** [illegible]

ELEMENT SIZE AND CHARACTERISTICS:

3 upper-case alphabetical characters, full field

ELEMENT DESCRIPTION:

Code identifying the type of data.

ACCEPTABLE CRITERIA:

- Required for all records (explicitly or implicitly as indicated above)

ACCEPTABLE ENTRIES:

(* File Type not currently in use)

CAP Chemical Analysis Paint
CAR Chemical Air
CAT Chemical Animal Tissue
CBD* Chemical Building Decontamination
CBE* Chemical Breathe
CBI Chemical Building - Interior
CBS Chemical Building Survey
CBT Chemical Biota
CBX Chemical Building - Exterior
CCM* Chemical Composite Samples
CCO* Chemical Concrete
CDM Chemical Drums
CDR* Chemical Drain
CDT* Chemical Detritus
CGW Chemical Ground Water

ACCEPTABLE ENTRIES (CONT.)

CIW* Chemical Infiltration Water
CMD* Chemical Methods Description
CPC Chemical Process Control
CPT Chemical Plant Tissue
CPW* Chemical Powder Wells
CQC Chemical Quality Control
CQR* Chemical QC Primary Standard
CSD Chemical Standards Development
CSE Chemical Sediment
CSM Chemical Survey Material
CSO Chemical Soil
CSR Chemical Sewer
CSS Chemical Stainless Steel
CSU Chemical Sump
CSW Chemical Surface Water
CTF Chemical Transformer
CTI* Chemical Tile
CVE* Chemical Vent
CWD* Chemical Wood
DTT Decon Treatability Matrix
EGO* Ecological General Observations
EMO* Ecological Macroinvertebrate Observations
EOC* Ecological Organism Cod.
ESP* Ecological Sample Preparation File
EVS* Ecological Herbage Vegetation
EWV* Ecological Woodland Vegetation
GAQ Geotechnical Aquifer Analysis
GEL* Geotechnical Elevation File
GFD Geotechnical Field Drilling
GGS Geotechnical Ground Water Stabilized
GMA Geotechnical Map
GMD* Geotechnical Methods Description
GMS* Geotechnical Methods Summary
GOR* Geotechnical Origin
GPA Geotechnical Physical Analysis
GWC Geotechnical Well Construction
PAT* Pollution Abatement Treatment
RAT Radiological Animal Tissue
RBI Radiological Building Interior
RBX Radiological Building Exterior
RGW Radiological Ground Water
RPT* Radiological Plant Tissue

ACCEPTABLE ENTRIES: (CONT.)

RQC* Radiological Quality Control
RSE Radiological Sediment
RSI* Radiological Survey Instrument
RSO Radiological Soil
RSR Radiological Sewer
RSW Radiological Surface Water
RWT* Radiological Surface Wipings
TOP* Treatment Operations
USS UXO/Metal Object

9.17 Site Type

ELEMENT IS USED IN THE FOLLOWING IR RECORDS AND DATA BASE TABLES:

Level 1 Record	Level 1 Column(s)	Level 2 Record	Level 2 Column(s)	Level 3 Table(s)	Level 3 DB Column
Sample	6-11	QCC	6-11	[illegible]	site_type
Field Drilling	3-6	[illegible]	6-11		
Groundwater Stabilized	3-6	[illegible]	6-11	[illegible]	site_type
Well Construction	3-6	[illegible]	6-11	[illegible]	site_type
Map-[illegible]	3-6	[illegible]	6-11	sample_[illegible]	site_type
Map-[illegible]	3-6	[illegible]	6-11	sample_[illegible]	site_type

ELEMENT SIZE AND CHARACTERISTICS:

4 upper-case alphabetic characters, left justified

ELEMENT DESCRIPTION:

A standardized code representing a type of landmark, feature, or construction.

ACCEPTABLE CRITERIA:

- Required on all records
- Must match one of the acceptable codes below
- Must match the site-type of the corresponding map record except for QC records
- Level 1 QC records must be blank

ACCEPTABLE ENTRIES:

(The site types are listed by data type for ease of use.)

Chemical or Radiological Data:

Chemical Analysis Point (CAP)

BLDG	building
FBLK	field blank
RNSW	rinsewater
SURF	surfaces in general
TRIP	trip blank

ACCEPTABLE ENTRIES (Cont.)

Chemical or Radiological Data: (Cont.)

Air (CAR):

ARMO	air monitoring station
BLDG	building
CMPG	composite grab sample
CMPH	composite sample taken from multiple locations
CSDT	chemical sludge disposal trenches
FBLK	field blank
OLSP	old lagoon sludge pile
RNSW	rinsewater
TRIP	trip blank
TUNL	tunnel
UNKG	unknown grab sample
WOOD	wood

Animal Tissue (CAT or RAT):

BIOL	biological sample
CMPH	composite sample taken from multiple locations
CREK	creek
FBLK	field blank
LAKE	lake
POND	pond
RNSW	rinsewater
RVER	river
STRM	stream
SURF	surfaces in general
TRIP	trip blank
TUNL	tunnel

Building Interior (CBI or RBI):

ASPH	asphalt
BATT	battery
BLDG	building
CASE	casemate
CMPH	composite sample taken from multiple locations
CONC	concrete
CTIL	ceiling tile
FBLK	field blank

ACCEPTABLE ENTRIES: (Cont.)

Chemical or Radiological Data: (Cont.)

Building Interior (CBI or RBI): (Cont.)

FELD	field
GSDA	grease or sludge disposal area
LINL	linoleum
PLAS	plaster
RNSW	rinsewater
SHRK	sheet rock
THSI	thermal system insulation
TRIP	trip blank
VFT	vinyl floor tile
WINS	wall insulation
WIPE	wipe
WLBD	wall board
WOOD	wood
WTIL	wall tile

Building Survey (CBS):

BATT	battery
BLDG	building
CASE	casemate
CMPH	composite sample taken from multiple locations
FBLK	field blank
RNSW	rinsewater
TRIP	trip blank
TUNL	tunnel

Chemical Biota (CBT):

BIOL	biological sample
FBLK	field blank
RNSW	rinsewater
TRIP	trip blank

ACCEPTABLE ENTRIES: (Cont.)

Chemical or Radiological Data: (Cont.)

Building Exterior (CBX or RBX):

ASPH	asphalt
BATT	battery
BLDG	building
CASE	casemate
CMNT	cementitious board
CMPH	composite sample taken from multiple locations
CONC	concrete
FBLK	field blank
GSDA	grease or sludge disposal area
RNSW	rinsewater
ROOF	roofing material
SHGL	shingle
SIDG	siding
TRIP	trip blank
WIPE	wipe

Drum (CDM):

DRUM	drum
FBLK	field blank
RNSW	rinsewater
TANK	tank
TRIP	trip blank
UFS	unknown fabricated substance

Groundwater (CGW or RGW):

CMPH	composite sample taken from multiple locations
DRWM	drilling water source
FBLK	field blank
FELD	field
FLPL	floodplain
LYSM	lysimeter
OTFL	outfall
RNSW	rinsewater
SPRG	spring
SPTK	septic tank
SUMP	sump

ACCEPTABLE ENTRIES (Cont.)

Chemical or Radiological Data (Cont.)

Groundwater (CGW or RGW): (Cont.)

SWAP	swamp
SWER	sewer
TANK	tank
TAPW	tap water source
TPSE	treatment plant
TRIP	trip blank
TUNL	tunnel
UNKG	unknown grab sample
WELD	dry well (old-fashioned-type well)
WELL	completed well
WIPE	wipe
WOOD	wood

Process Control (CPC):

CLGN	calgon process
CMPH	composite sample taken from multiple locations
ERDL	erdlator
FBLK	field blank
FELD	field
GWTS	groundwater treatment system
INCN	incinerator
IWTP	industrial waste treatment plant
RNSW	rinsewater
TANK	tank
TAPW	tap water source
TPSE	treatment plant
TRAN	transformer
TRIP	trip blank
TUNL	tunnel
UNKG	unknown grab sample

ACCEPTABLE ENTRIES (Cont.)

Chemical or Radiological Data (Cont.)

Plant Tissue (CPT or RPT):

BIOL	biological sample
CMPH	composite sample taken from multiple locations
FBLK	field blank
IWTP	industrial waste treatment plant
LAKE	lake
PLUG	shovel sample
POND	pond
RNSW	rinsewater
SURF	surfaces in general
TRIP	trip blank
TUNL	tunnel
WOOD	wood

Standards Development (CSD):

EVAL	evaluation
FBLK	field blank
RNSW	rinsewater
TEST	test
TRIP	trip blank
TUNL	tunnel
UNKG	unknown grab sample

Sediment (CSE or RSE):

BASN	basin
BAYU	bayou
BORE	bore hole
CIST	cistern
CMPH	composite sample taken from multiple locations
CREK	creek
DRUM	drum
DTCH	ditch or drainage
FBLK	field blank
FELD	field
FLPL	floodplain
GSDA	grease or sludge disposal area
IWTP	industrial waste treatment plant

ACCEPTABLE ENTRIES: (Cont.)

Chemical or Radiological Data: (Cont.)

Sediment (CSE or RSE): (Cont.)

LAFL	landfill
LAGO	lagoon
LAKE	lake
MAHO	manhole
MT	marshy area
OTFL	outfall
PLUG	shovel sample
POND	pond
PRSW	process sewer
RNSW	rinse water
RSVR	reservoir
RVER	river
SKHL	sink hole
SPRG	spring
STP	sanitary treatment plant
STRM	stream
STSW	storm sewer
STWA	standing water
SUMP	sump
SURF	surfaces in general
SWAP	swamp
SWER	sewer
TANK	tank
TPSE	treatment plant
TRIP	trip blank
TUNL	tunnel
UNKG	unknown grab sample
WASS	solid waste
WELD	dry well (old-fashioned-type well)
WIPE	wipe
WOOD	wood

ACCEPTABLE ENTRIES: (Cont.)

Chemical or Radiological Data: (Cont.)

Surety Material (CSM):

FBLK	field blank
RNSW	rinsewater
TRIP	trip blank
UNKG	unknown grab sample

Soil (CSO or RSO):

AREA	area of land
BASN	basin
BLDG	building
BORE	bore hole
BUGR	burning ground
CD	coniferous-deciduous woodland
CMPH	composite sample taken from multiple locations
COMP	composite soil sample taken within 100m diameter
CREK	creek
CSUT	chemical sludge disposal trenches
DEMO	demolition area
DTCH	ditch or drainage
DW	deciduous woodland
FBLK	field blank
FELD	field
FLPL	floodplain
GRAB	grab sample
GSDA	grease or sludge disposal area
LAFL	landfill
LAGO	lagoon
MT	marshy area
OLSP	old lagoon sludge pile
OTFL	outfall
PIT	pit/test spade
PLUG	shovel sample
RNSW	rinse water
SKHL	sink hole
STSW	storm sewer
SUMP	sump
SURF	surfaces in general
SWAP	swamp

ACCEPTABLE ENTRIES (Cont.)

Chemical or Radiological Data: (Cont.)

Soil (CSO or RSO): (Cont.)

TANK	tank
TPSE	treatment plant
TRIP	trip blank
TRST	tree stand
TUNL	tunnel
UNKG	unknown grab sample
WASS	solid waste
WIPE	wipe
WT	weedy area

Sewer (CSR or RSR):

CMPH	composite sample taken from multiple locations
FBLK	field blank
GSDA	grease or sludge disposal area
MAHO	manhole
RNSW	rinsewater
SASW	sanitary sewer
SPTK	septic tank
STP	sanitary treatment plant
SWER	sewer
TRIP	trip blank
TUNL	tunnel
UNKG	unknown grab sample

Stainless Steel (CSS):

FBLK	field blank
RNSW	rinsewater
TRIP	trip blank
UNKG	unknown grab sample

Surface Water (CSW or RSW):

BASN	basin
BAYU	bayou
BLDG	building
CIST	cistern

ACCEPTABLE ENTRIES. (Cont.)

Chemical or Radiological Data: (Cont.)

Surface Water (CSW or RSW): (Cont.)

CMPH	composite sample taken from multiple locations
CREK	creek
DAM	dam
DTCH	ditch or drainage
FBLK	field blank
FELD	field
GSDA	grease or sludge disposal area
IWTP	industrial waste treatment plant
LAFL	landfill
LAGO	lagoon
LAKE	lake
MT	marshy area
OTFL	outfall
POND	pond
RNSW	rinse water
RSVR	reservoir
RVER	river
SKHL	sink hole
SPRG	spring
STP	sanitary treatment plant
STRM	stream
STSW	storm sewer
STWA	standing water
SUMP	sump
SWAP	swamp
SWER	sewer
TANK	tank
TAPW	tap water source
TPSE	treatment plant
TRIP	trip blank
TUNL	tunnel
UNKG	unknown grab sample
WASW	liquid waste
WIPE	wipe

ACCEPTABLE ENTRIES: (Cont.)

Chemical or Radiological Data: (Cont.)

Transformers (CTF):

FBLK	field blank
RNSW	rinsewater
TRAN	transformer
TRIP	trip blank

Decontamination Data:

Decontamination Treatment Technology (DTT):

DCON	decontamination

Geotechnical Data:

Groundwater Stabilized (GGS):

BASN	basin
BAYU	bayou
CREK	creek
DTCH	ditch or drainage
LAGO	lagoon
LAKE	lake
LYSM	lysimeter
MT	marshy area
OTFL	outfall
POND	pond
RSVR	reservoir
SPRG	spring
STRM	stream
STSW	storm sewer
SUMP	sump
SWAP	swamp
SWER	sewer
WELL	completed well

Field Drilling (GFD):

BORE	bore

(This field is not contained in the Level 3 gfd table since the only acceptable Site_Type for field drilling data is "BORE".)

Well Construction (GWC):

WELL	completed well
LYSM	lysimeter

Map Data (GMA):

All Site Types (except QC) are allowable entries for the map file. The Site Type used in the data file must match exactly that used in the map file.

Other Data:

Unexploded Ordnance/Metal Object (USS):

UNKG	unknown grab sample

8.05 Depth (Chemical)

ELEMENT IS USED IS THE FOLLOWING IR RECORDS AND DATA BASE TABLES:

Level 1 Record	Column(s)	Level 2 Record	Column(s)	Level 3 Table(s)	DD Column
Sample	[illegible]	[illegible]	[illegible]	[illegible]	depth

ELEMENT SIZE AND CHARACTERISTICS:

Levels 1 and 2: Decimal (5 digits plus decimal point)
Level 3: Float 4

ELEMENT DESCRIPTION:

A number to express to the nearest tenth of a foot the depth from the topographic surface to the top of the interval being sampled.

ACCEPTABLE CRITERIA:

- Required on all chemical records except QC records that do not originate in the field
- Entry of "-0" is not allowed
- Must be a decimal to the nearest tenth of a foot
- For buildings and other samples above the topographic surface, use a "-" (minus sign) and 3 digits plus decimal point to express the sample height above the topographic surface.

ACCEPTABLE ENTRIES:

Depth:

Minimum value 0.0
Maximum value 9999.9

Height:

Minimum value -99.9
Maximum value 0.0

8.19 Sample Date

ELEMENT IS USED IN THE FOLLOWING IR RECORDS AND DATA BASE TABLES.

Level 1 Record	Column(s)	Level 2 Record	Column(s)	Level 3 Table(s)	DD Column
Sample	[illegible]	[illegible]	[illegible]	[illegible]	samp_date

ELEMENT SIZE AND CHARACTERISTICS:

Level 1: 8 characters - format (MM/DD/YY)
Level 2: Julian date (YYDDD)
Level 3: Output date format (DD-mmm-YYYY)

ELEMENT DESCRIPTION:

Date on which the sample was taken

ACCEPTABLE CRITERIA:

Valid date

ACCEPTABLE ENTRIES:

Minimum: >= 1 Jan 75
Maximum: <= Sample Preparation Date
<= Analysis Date
<= Current Date

8.03 Analysis Type

ELEMENT IS USED IN THE FOLLOWING IR RECORDS AND DATA BASE TABLES.

Level 1		Level 2		Level 3	
Record	Column(s)	Record	Column(s)	Table(s)	DB Column
		SCCum	125-126	chemGrup	anly_type

ELEMENT SIZE AND CHARACTERISTICS:

2 characters, full field

ELEMENT DESCRIPTION:

A code that represents the certification level for the analysis. It is generated during data-acceptance checking from information in the data record and is based on the Chemical Certification Matrix below. (If the method is 00 or 99, the Analysis Type will be the same as the method.)

CHEMICAL CERTIFICATION MATRIX					
Analysis Type	Method	Analysis Accuracy	Measurement Boolean	Flagging Code	Certification Required
C1	not 00 and not 99	any	LT, GT, or blank	blank	yes
C1	not 00 and not 99	any	ND	T	no
1A	not 00 and not 99	any	LT, GT, or blank	blank	yes
1A	not 00 and not 99	any	ND	R	no
1A	not 00 and not 99	000	blank	S	no
1B	not 00 and not 99	any	LT, GT, or blank	blank	yes
1B	not 00 and not 99	any	ND	R	no
1B	not 00 and not 99	000	blank	S	no
C2	not 00 and not 99	blank	ND or PP	blank	yes
00	00	blank	any	blank	no*
99	99	blank	any	blank	no**

*Reserved for Test Names (analytes) that do not require certification. See section 8.24 Test Name (analytes) for list of Method 00 Test Names.

**Reserved for special cases only when authorized by USATHAMA.

ACCEPTABLE CRITERIA:

- Required for all level 2 and 3 chemical records

ACCEPTABLE ENTRIES:

SCC Records:

- C1 Class 1 (quantitative)
- 1A Class 1A (GC-MS methods)
- 1B Class 1B (low sample throughput - not GC-MS methods)
- C2 Class 2 (qualitative)
- 00 Special Test Names that do not require certification
- 99 Special cases only when authorized by USATHAMA

SAC Records (alcoholic):

- QN Quantitative methodology
- SQ Semiquantitative methodology
- QL Qualitative methodology

8.01 Analysis Accuracy

ELEMENT IS USED IN THE FOLLOWING IR RECORDS AND DATA BASE TABLES:

Level 1		Level 2		Level 3	
Record	Column(s)	Record	Column(s)	Table(s)	DB Column
Analysis	[illegible]	SCC SCR	[illegible] [illegible]	chemGrup chemGrup	anly_acc anly_acc

ELEMENT SIZE AND CHARACTERISTICS:

Levels 1 and 2: Decimal (3 digits plus decimal point)
Level 3: Float 4

ELEMENT DESCRIPTION:

Decimal number representing the standard error of the best-fit linear regression line of Found vs. Target values for QC standard additions data. Exponent and measurement units will be the same as that for the measurement statistics. (Use the USATHAMA QC program to compute this value.)

ACCEPTABLE CRITERIA:

- Required on all chemical and radiological records
- Leave blank when the Measurement Boolean is "NN", "PP", "OO", "ND" or "BB"
- Must match range described below (decimal is required; do not adjust for the exponent).
- Must meet following file conditions:

Chemical Data:

Quantitative Records:

Must be a decimal number between ".001" and "999."
Zero and blank are not allowed

Semiquantitative (when Unit is "UGL", "UGG", "MGKG", or "UGCF" and the lab is certified for the Test Name):

Must be a decimal number between ".001" and "999."
Zero and blank are not allowed

Semiquantitative (laboratory is not Certified for the Test Name; Unit of Measurement is "UGL", "UGG", "MGKG", or "UGCF" and Flagging Code is "S"):

"000."

ACCEPTABLE CRITERIA: (CONT.)

Qualitative:

blank

Method 00:

blank

Method 99:

blank

Radiological Data:

Decimal number between ".001" and "999." (zero and blank not allowed)

ACCEPTABLE ENTRIES:

Chemical quantitative, chemical semiquantitative (lab certified), and radiological:

Minimum: .001
Maximum: 999.

Chemical semiquantitative (internal standard; lab not certified):

000.

Qualitative, Method 00 and Method 99:

blank

8.26 Value (Chemical)

ELEMENT IS USED IN THE FOLLOWING IR RECORDS AND DATA BASE TABLES:

Level 1 Record	Level 1 Column(s)	Level 2 Record	Level 2 Columns	Level 3 Table(s)	Level 3 DB Column
		[illegible]	[illegible]	[illegible]	[illegible]

ELEMENT SIZE AND CHARACTERISTICS:

Level 2: Mantissa - 4 digits plus decimal point, right justified
Exponent - 3 digits, right justified
Level 3: Float - 6 digits plus decimal point

ELEMENT DESCRIPTION:

Value of the analysis dependent on Test Name and Unit of Measurement. The Value is computed by one of the following two equations:

	EQUATION	DATA TYPE	CONDITION
(1)	$UncorrectedValue \times DilutionFactor$	Non-CQC	Measurement Boolean = "LT", "GT", "EQ", or "ND"
		CQC	QC Test = "S", "M", or "N" and the Measurement Boolean = "LT", "GT", "EQ", "ND", or blank)
(2)	$\frac{UncorrectedValue \times DilutionFactor}{AnalyteAccuracy} \times \frac{100}{100 - Moisture}$	Non-CQC	Measurement Boolean = blank
		CQC	QC Test = "R", "F", or "T"

ACCEPTABLE CRITERIA:

- Required for all chemical records.
- See section 8.25, Uncorrected Value, for maximum number of significant figures.

ACCEPTABLE ENTRIES:

Level 2

Mantissa:

Minimum: 1.000
Maximum: 9.990

Exponent:

Minimum: -6
Maximum: 5

Level 3:

Minimum: .000001
Maximum: 999000.

8.12 Measurement Boolean

ELEMENT IS USED IN THE FOLLOWING IR RECORDS AND DATA BASE TABLES:

Level 1 Record	Level 1 Column(s)	Level 2 Record	Level 2 Column(s)	Level 3 Table(s)	Level 3 DB Column
[illegible]	[illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]

ELEMENT SIZE AND CHARACTERISTICS:

2 upper-case alphabetical characters, full field (blank allowed)

ELEMENT DESCRIPTION:

Indicates that the measured quantity is not within the certified range, or that the test used does not yield quantitative results. (Certified range determined by USATHAMA method.)

ACCEPTABLE CRITERIA:

- Must match an acceptable code below for the level of certification pertinent to the record in question.
- The value must be at the maximum certified concentration when "GT" is used for quantitative or semiquantitative records.
- The value must be at the certified reporting limit when "LT" or "EQ" is used for quantitative or semiquantitative records.

ACCEPTABLE ENTRIES

Quantitative and Semiquantitative:

EQ	equal to the Certified Reporting Limit
LT	less than Certified Reporting Limit
GT	greater than maximum certified concentration
blank	used when the analysis results are within the certified range

Semiquantitative:

ND	not detectable

Qualitative spot assays:

NN	negative results
PP	positive results
blank	not allowed for spot assays

ACCEPTABLE ENTRIES: (CONT.)

Qualitative other than spot assay:

EQ	equal to detection limit
LT	less than detection limit
GT	greater than the upper limit
blank	not allowed

[illegible] (no certification required)

LT	less than detection limit
GT	greater than upper limit
blank	for all other cases

Radiological files:

BB	below background
LT	less than detection limit
GT	greater than upper limit
blank	all other cases

[illegible]:

OD	positive odor test
QI	qualitative - internal standard

9.19 Unit of Measurement

ELEMENT IS USED IN THE FOLLOWING IR RECORDS AND DATA BASE TABLES:

Level 1		Level 2		Level 3	
Record	Columns	Record	Columns	Table(s)	DB Column
Lot	10-10	[illegible]	[illegible]	[illegible]	unit_meas
Field Drilling	[illegible]	[illegible]	[illegible]	gfd	unit_meas
Well Construction	[illegible]	[illegible]	[illegible]	gwc	unit_meas

ELEMENT SIZE AND CHARACTERISTICS:

4 alphanumeric character, left justified (no embedded blanks)

ELEMENT DESCRIPTION:

Code representing the Unit of Measurement of the Value.

Prefix Code	Prefix	Power of 10
A	atto	-18
F	femto	-15
P	pico	-12
N	nano	-9
U	micro	-6
M	milli	-3
K	kilo	+3
ME	mega	+6
G	giga	+9
T	tera	+12
PT	peta	+15
E	exta	+18

ACCEPTABLE CRITERIA:

- Required on all records that contain an uncorrected mantissa value
- Blank for records where the Measurement Boolean is "NN" or "PP"
- Blank for records where Test Name is "PH"
- Must match one of the codes listed below

ACCEPTABLE ENTRIES:

Chemical Data:

UNIT	MEDIA	DESCRIPTION
UGL	liquids, drums	micrograms/liter
UGG	solids, drums	micrograms/gram
MGM3	gases	milligrams/cubic meter
UGM3	gases	micrograms/cubic meter
UGC2	surfaces	micrograms/square centimeter

Special Cases (Method 00):

UNIT	DESCRIPTION	TEST NAME(S)
blank	unitless	PH
C	Celsius	TEMP
CPML	count/100 ml	TOTCOL
CU	color unit	COLOR
FCM3	fibers/cubic centimeter	ASBEST (and other asbestos Test Names)
NTU	nephelometric turbidity unit	TURBID
PCT	percent	ASBEST (and other asbestos Test Names)
TDN	taste dilution index number	TASTE
TON	threshold odor number	ODOR
UMHC	micromho/cm-conductivity	COND

Quality Control Data:

UNIT	DESCRIPTION
BLANK	pH
MOLP	mole percent
PC	percent
PCTP	percent phosphorus
PPB	parts/billion
PPK	parts/thousand
PPM	parts/million
PPT	parts/trillion
UMHO	micromho-conductance

ACCEPTABLE CRITERIA: (CONT.)

Radiological Data:

UNIT	DESCRIPTION
CM2P	picocuries/square centimeter
CPM	counts/minute
CTS	counts
DMM2	disintegrations/minute/square meter
DPM	disintegrations/minute
DPM3	disintegrations/cubic meter
DPMA	disintegrations/minute/100 square cm
FCL	femtocuries/liter
FGG	femtograms/gram
FGL	femtograms/liter
MRH	millirem/hour
MCM	millicuries/meter
MCML	microcuries/milliliter
MCGA	milligram/gram-ash
MRAD	millirads
MRH	millirem/hour
MRM	milliroentgens/minute
NCL	nanocuries/liter
NCNG	nanocuries/nanogram
NGG	nanograms/gram dry
NGL	nanograms/liter
PCC	picocuries
PCG	picocuries/gram
PCGA	picocuries/gram-ash
PCGD	picocuries/gram-dry
PCGW	picocuries/gram-wet
PCL	picocuries/liter
PCM2	picocuries/square meter
PCML	picocuries/milliliter
UC	microcuries
UCGA	microcuries/gram ash
UCGD	microcuries/gram dry
UCGW	microcuries/gram wet
UCL	microcuries/liter
UCML	microcuries/milliliter
UGG	microgram/gram

ACCEPTABLE CRITERIA: (CONT.)

Geotechnical Data:

Field Drilling Data:

UNIT	DESCRIPTION	ACTION/MEASUREMENT(S)
BL	hammer blows	HABLO
FT	feet	DBNK, DPTOT, GRDWT, RECVR, RFUSL
L	liters	BAILV
MIN	minutes	BAILT, RECVT, TIME (depending on Method)
PSI	pounds/square inch	HYPRS
SEC	seconds	TIME (depending on Method)
blank		ADWALL, BFILL, BSTAT, CAVEL, COLOR, CONSS, DRIVE, GRAIN, MODIF, MOISC, NOGWT, SAMPL, SURF, TOPO, USCS

Well Construction Data:

UNIT	DESCRIPTION	ACTION/MEASUREMENT(S)
FT	feet	CASE, CASED, CASES, CSEAL, DPTOT, LYSDP, RECVR, STKUP
L	liters	BAILV
MIN	minutes	BAILT, RECVT
blank		BFILL, BSEAL, CFILT, GROUT, SCREN, SURF, TOPO, WSTAT

ELEMENT IS USED IN THE FOLLOWING IR RECORDS AND DATA BASE TABLES.

Level 1 Record	Level 1 Columns	Level 2 Record	Level 2 Columns	Level 3 Tables	Level 3 DB Column
Analysis	80	QCCalc	160	[illegible]	[illegible]

ELEMENT SIZE AND CHARACTERISTICS:

1 upper-case alphabetical character, full field or blank

ELEMENT DESCRIPTION:

Code to indicate other-than-usual analytical conditions or results.

ACCEPTABLE CRITERIA:

B Analyte found in blank as well as sample. This flagging code is to be used for analytes which are found and quantitated above the Certified Reporting Limit (CRL) or at higher-than-normal background levels in the method blank and also in analytical samples.

C Analysis was confirmed. This flagging code is to be used when a confirmational analysis bears out the reported results. The confirmational analysis must involve a different column or analytical technique.

D Duplicate sample or test name. This flagging code is to be used to distinguish analytical results when duplicate analyses are requested. This flagging code should be used for the second (duplicate) sample only.

E Element run with background correction. This flagging code is to be used to identify reported results from ICP or AA analyses when background correction is not the normal mode of analysis.

F Sample filtered before analysis. This flagging code is to be used when the results of filtered samples are to be differentiated from non-filtered samples, or when (required) filtering of samples is a deviation from the SOP.

G Reported results are affected by interferences or high background. This flagging code is to be used when levels of analyte at or near the CRL cannot be accurately quantified to the actual CRL due to interferences. (This will allow the laboratory to input a different CRL, rather than defaulting to the Methods table.)

ACCEPTABLE CRITERIA (CONT.)

H Out of control but data accepted due to high recoveries. This flagging code is to be used when control analytes show higher-than-normal recoveries, assuring USATHAMA that if a contamination was found in the sample at or near the CRL, it would have been reported.

I Out of control, data accepted due to low recoveries. This flagging code is to be used when recoveries of the control analytes are depressed so that there is no assurance that values at or near the CRL are accurate.

J Missed holding time, acceptable based on the results of the holding-time study. This flagging code is to be used when holding times are missed but data is not believed to be affected based on the joint EPA-USATHAMA study.

K Missed holding times for extraction and preparation. This flagging code is to be used when extraction and/or preparation dates are not met but data quality is not believed to be affected.

L Missed holding time for analysis. This flagging code is to be used when extraction and/or preparation times have been met but analytical hold times have been missed and the data quality is not believed to be affected.

M Duplicate (high) spike analysis not within control limits. This flagging code is to be used when one of the duplicate spikes gives significantly different results, placing the spike average outside of control limits.

N Low spike recovery is not within control limits. This flagging code is to be used when the low spike recovery (not the three-day average) falls outside of control limits and the analytical data is potentially biased.

P Results less than CRL but greater than Criteria of Detection (COD). This flagging code is to be used when the laboratory can quantify results which would normally fall below the CRL.

Q Surrogate recovery markedly different from historical data. This flagging code is to be used when the recovery of a surrogate is markedly different from historical data.

R Analyte required for reporting purposes but not currently certified. This flagging code is used to identify GC/MS analytes for which no certification data exists but are a normal part of the EPA methodology. This also signifies that the analyte was not quantitated (must be used in conjunction with a Boolean of ND).

ACCEPTABLE CRITERIA: (CONT.)

S Results based on internal standard. This flagging code is to be used in conjunction with methods which use an internal standard. Compounds for which no certification data exist are quantitated by direct comparison to the internal standard. Cannot be used with a boolean, since there is (implied) quantitation.

T Analyzed for but not detected. This flagging code is to be used for non-GC/MS multi-analyte methods to report compounds that are a normal part of the methodology but for which no certification data exists.

U Analysis is unconfirmed. This flagging code is to be used when a confirmational analysis is done but does not verify the analytical results obtained from the initial analysis.

V Sample subjected to unusual storage conditions. This flagging code is to be used when the sample storage conditions may affect the analytical results.

W Single analyte required from a multi-analyte method. This flagging code is to be used when only one analyte from a multi-analyte method is to be reported. This flagging code is useful when spiking solutions contain more than one analyte of interest for the method.

X Analyte recovery outside of certified range but within acceptable limits. This flagging code is to be used when analyte recoveries exceed the upper limit of the certified range by less than 15% and the laboratory feels a dilution is not warranted.

ACCEPTABLE ENTRIES:

B Analyte found in blank as well as sample.
C Analysis was confirmed.
D Duplicate sample or Test Name.
E Element run with background correction.
F Sample filtered before analysis.
G Reported results affected by interferences or high background.
H Out of control but data accepted due to high recoveries.
I Out of control, data accepted due to low recoveries.
J Missed holding time, acceptable based on holding-time study.
K Missed holding times for extraction and preparation.
L Missed holding time for analysis.
M Duplicate (high) spike analysis not within control limits.
N Low spike recovery is not within control limits.

ACCEPTABLE ENTRIES: (CONT.)

P Results less than CRL but greater than COD.
Q Surrogate recovery markedly different from historical data.
R Analyte required for reporting purposes but not currently certified.
S Results based on internal standard.
T Analyzed for but not detected.
U Analysis is unconfirmed.
V Sample subjected to unusual storage conditions.
W Single analyte required from a multi-analyte method.
X Analyte recovery outside of certified range but within acceptable limits.

ELEMENT IS USED IN THE FOLLOWING IR RECORDS AND DATA BASE TABLES:

Level 1		Level 2		Level 3	
Record	Columns	Record	Columns	Tables	DB Column
Lot	[illegible]	[illegible]	100-101	[illegible]	lab_prime
Field Drilling	76-77	[illegible]	76-77	[illegible]	lab_prime
Groundwater Stabilized	[illegible]	[illegible]	[illegible]	[illegible]	lab_prime
Well Construction	76-77	[illegible]	76-77	[illegible]	lab_prime

ELEMENT SIZE AND CHARACTERISTICS:

2 alphabetic characters, full field

ELEMENT DESCRIPTION:

Code to identify the prime contractor (i.e., the organization directly responsible to USATHAMA via a contract or volume agreement)

ACCEPTABLE CRITERIA:

- Required on all chemical and geotechnical records.

ACCEPTABLE ENTRIES:

(alphabetic by code)

AC Ace Well Drilling, Inc.
AD Arrow Drilling Co.
AE Aetna Technical Services, Inc.
AG Agri Science
AH Army Environmental Hygiene Agency (AEHA)
AL Arthur D. Little
AN Argonne Laboratories
AP Alabama AAP
AQ Aquatek, Inc., Streamwood, IL
AR Atlantic Research, Inc.
AS Allinat Techsystems (formerly Honeywell)
AT ATEC and Associates, Inc.
BA Barger and Associates
BC Battelle, Columbus, OH
BH B & H Drilling, No. 2
BM Brewer-Menter
BN Battelle Northwest
CA Calgon, Pittsburgh, PA

ACCEPTABLE ENTRIES. (Cont.)

CE Controls for Environmental Pollution
CI Century Refining Co. Labs
CH Colorado State Health Department
CL California Analytical Laboratories, Inc.
CM Chem-Nuclear Environmental Services, Inc., CO
CO Cornhusker AAP
CQ Central Quality Assurance Laboratory
CR Conestoga-Rovers Assoc.
CS Chemical Research, Development & Engineering Center
CW California Water Labs, Inc.
DA Donohue and Associates
DI Developers, International Services Corp
DM Dames and Moore, Inc.
DP Processing Associates (RMA only)
EA Environmental Protection Agency, Bay St. Louis, MS
EB Ebasco
EC Edgewood Chemical Laboratory
ED Environmental Science and Engineering, Inc., Denver, CO
EE Envirodyne Engineers, Inc.
EG E G & G, Milan, TN
EH Environmental Health Laboratory, Macon, GA
EI Earth Sciences, Inc.
EK Engineering Tech. Assoc., Ellicott City, MD
EL Ecology & Environment, Inc., Lancaster, NY
EM Environmental Resources Management, Inc., Exton, PA
EN Environmental Testing and Certification Corp., Edison, NJ
EO ENSECO-CAL, West Sacramento, CA
EP Environmental Protection Systems, Inc.
ER ERTEC, Inc.
ES Environmental Science & Engineering, Inc, Gainesville, FL
ET EA Engineering, Science & Technology, Inc.
EZ Engineering Science, Inc., Pasadena, CA
FA Frankford Arsenal, Philadelphia, PA
FC Federal Cartridge Corp.
FM Fort Monroe Field Lab
FX Fox Drilling
GA Geologic Associates, Inc.
GD Graves Drilling Co.
GM Geraghty and Miller, Inc.
GS US Geological Survey
HD Hatch Drilling, Inc.
HE Hanger Drilling, Inc.

ACCEPTABLE ENTRIES: (Cont.)

HH Harvey Hash
HI Hittman Associates
IC ICF Technology, Fairfax, VA
IP Interpoll
IT International Technology Corp., Knoxville, TN
JA JAYCOR, Vienna, VA
JE Jacobs Engineering Group, Inc., Pasadena, CA
JK J. Kleinfelder
JM James Montgomery Engineering, Inc.
JO E.C. Jordan Co., Portland, ME
JT JTC Environmental Consultants, Inc.
LE Law Engineering
LG Lang Exploratory
LO Louisiana AAP (Thiokol)
LW Lone Western
MA Moody and Associates
MC MCI Environmental Engineers
MD Miller Drilling
ME Metatrace, Inc., St. Louis, MO
MF Metcalf & Eddy, Inc., Columbus, OH
MK Missouri River Division - Kansas City
MM Milan AAP (Martin Marietta)
MN Minnesota State, Department of Health Laboratory
MO Missouri River District - Omaha
MT Martel Laboratory, Inc., Baltimore, MD
MW Midwest Research Institute
OH O. H. Materials Corp., Findlay, OH
OL Olin Corporation
OR Oak Ridge National Laboratory
PB Pine Bluff Arsenal
PC Pace Laboratories, Inc., Minn., MN
PI Picatinny Arsenal
PN PA Dept. of Environmental Resources
PO Polytechnic of New York
PT Pittsburgh Testing
RA Redstone Arsenal
RC Radiation Management Corp. (RMC)
RE Resource
RI Rockwell International Laboratories
RM Rocky Mountain Arsenal
RS R.L. Stollar & Associates, Inc., Denver, CO
RT Roberts Scientific Services

ACCEPTABLE ENTRIES: (Cont.)

RW Rocky Mountain/WES Combination (RMA only)
SC Shell Chemical, Rocky Mountain Arsenal
SD Stephenson Drilling
SE Soil Testing Engineers
SH Salgado, Hawkins & Bedrick
SL Stewart Laboratories
SO Southdries Laboratory
SS STS Consultants, Inc., Minneapolis, MN
ST Soil Testing Services
SV Sverdrup Technology, Inc.
SW Southwestern Laboratories
TC Toronto Consultants, Inc.
TD Tour Drilling
TE Techsum
TH USATHAMA
TI Testing, Incorporated
TO Tooele Army Depot, UT
UB DataChem, Inc.
UG University of Georgia
UN UNC, Grand Junction, CO
UT University of Texas, Arlington, TX
VR Versar, Inc., Springfield, VA
WA Water & Air Research, Inc.
WE Waterways Experiment Station (WES)
WF Walker Flood Drillers
WI Weston Services, Inc., Norcross, GA
WL Western Laboratory
WN Roy F. Weston, Westchester, PA
WO Woodward Clyde Federal Services, Washington, DC
WP West Point
WS Roy F. Weston, Inc.
WT Roy F. Weston, Stockholm CA
WZ Wamyo Engineering, Inc.

(listed alphabetic by contractor name)

Ace Well Drilling, Inc. AC
Aetna Technical Services, Inc. AE
Agri Science AG
Alabama AAP AP
Alliant Techsystems (formerly Honeywell) AS

ACCEPTABLE ENTRIES: (Cont.)

Aqualab, Inc., Streamwood, IL	AQ
Argonne Laboratories	AN
Army Environmental Hygiene Agency (AEHA)	AH
Arrow Drilling Co.	AD
Arthur D. Little	AL
ATEL and Ambient Inc.	AT
Atlantic Research, Inc.	AR
B & H Drilling, No. 2	BH
Battelle, Columbus, OH	BC
Battelle Northwest	BN
Bowser-Morner	BM
Burgess and Associates	BA
Calgon, Pittsburgh, PA	CA
Caledonia Analytical Laboratories, Inc.	CL
California Water Labs, Inc.	CW
Central Quality Assurance Laboratory	CQ
Century Refining Co. Labs	CF
Chem-Nuclear Environmental Services, Inc., CO	CM
Chemical Research, Development & Engineering Center	CS
Colorado State Health Department	CH
Conestoga-Rovers Assoc.	CR
Controls for Environmental Pollution	CE
Cornhusker AAP	CO
Dames and Moore, Inc.	DM
DataChem, Inc.	UB
Developers, International Services Corp.	DI
Donahue and Associates	DA
E G & G, Milan, TN	EG
E.C. Jordan Co., Portland, ME	JO
EA Engineering, Science & Technology, Inc.	ET
Earth Sciences, Inc.	EI
Ebasco	EB
Ecology & Environment, Inc., Lancaster, NY	EL
Edgewood Chemical Laboratory	EC
Engineering Science, Inc., Pasadena, CA	EZ
Engineering Tech. Assoc., Ellicott City, MD	EA
ENSCO-CAL, West Sacramento, CA	EO
Envirodyne Engineers, Inc.	EE
Environmental Science & Engineering, Inc., Gainesville, FL	ES
Environmental Health Laboratory, Macon, GA	EH
Environmental Protection Agency, Bay St. Louis, MS	EA
Environmental Protection Systems, Inc.	EP

ACCEPTABLE ENTRIES (Cont.)

Environmental Resources Management, Inc., Exton, PA	EM
Environmental Science and Engineering, Inc., Denver, CO	ED
Environmental Testing and Certification Corp., Edison, NJ	EN
ERTEC, Inc.	ER
Federal Cartridge Corp.	FC
Fort Meade Field Lab	FM
Fox Drilling	FX
Frankford Arsenal, Philadelphia, PA	FA
Geologic Associates, Inc.	GA
Geraghty and Miller, Inc.	GM
Graves Drilling Co.	GD
Harvey Hash	HH
Hatch Drilling, Inc.	HD
Hengen Drilling, Inc.	HE
Hittman Associates	HI
ICF Technology, Fairfax, VA	IC
International Technology Corp., Knoxville, TN	IT
Interpoll	IP
J. Kleinfelder	JK
Jacobs Engineering Group, Inc., Pasadena, CA	JE
James Montgomery Engineering, Inc.	JM
JAYCOR, Vienna, VA	JA
JTC Environmental Consultants, Inc.	JT
Lane Western	LW
Long Exploratory	LG
Law Engineering	LE
Louisiana AAP (Thiokol)	LO
Martel Laboratory, Inc., Baltimore, MD	MT
MCI Environmental Engineers	MC
Metatrace, Inc., St. Louis, MO	ME
Metcalf & Eddy, Inc., Columbus, OH	MF
Midwest Research Institute	MW
Milan AAP (Martin-Marietta)	MM
Miller Drilling	MD
Minnesota State, Department of Health Laboratory	MN
Missouri River District - Kansas City	MK
Missouri River District - Omaha	MO
Moody and Associates	MA
O. H. Materials Corp., Findlay, OH	OH
Oak Ridge National Laboratory	OR
Olin Corporation	OL
PA Dept. of Environmental Resources	PN

ACCEPTABLE ENTRIES: (Cont.)

Pace Laboratories, Inc., Minn., MN	PC
Picatinny Arsenal	PI
Pine Bluff Arsenal	PB
Pittsburgh Testing	PT
Polytechnic of New York	PQ
Physically [illegible] (RMA only)	DP
R.L. Stollar & Associates, Inc., Denver, CO	RS
Radiation Management Corp. (RMC)	RC
Raltech Scientific Services	RT
Redstone Arsenal	RA
Rexnord	RE
Rockwell International Laboratories	RI
Rocky Mountain Arsenal	RM
Rocky Mountain/WES Combination (RMA only)	RW
Roy F. Weston, Inc.	WS
Roy F. Weston, Stockton, CA	WT
Roy F. Weston, Westchester, PA	WN
Sergent, Hauskins & Beckwith	SH
Shell Chemical, Rocky Mountain Arsenal	SC
Soil Testing Engineers	SE
Soil Testing Services	ST
Southwest Laboratory	SO
Southwestern Laboratories	SW
Stephenson Drilling	SD
Stewart Laboratories	SL
STS Consultants, Inc., Minneapolis, MN	SS
Sverdrup Technology, Inc.	SV
Terhune	TE
Terracon Consultants, Inc.	TC
Test Drilling	TD
Testing, Incorporated	TI
Tooele Army Depot, UT	TO
UNC, Grand Junction, CO	UN
University of Georgia	UG
University of Texas, Arlington, TX	UT
US Geological Survey	GS
USATHAMA	TH
Versar, Inc., Springfield, VA	VR
Walter Flood Drillers	WI
Warzyn Engineering, Inc.	WZ
Water & Air Research, Inc.	WA
Waterways Experiment Station (WES)	WE

ACCEPTABLE ENTRIES: (Cont.)

West Point	WP
Western Laboratory	WL
Weston Services, Inc., Norcross, GA	WI
Woodward Clyde Federal Services, Washington, DC	WO

Test Name (Analyte) 8.24

ELEMENT IS USED IN THE FOLLOWING IR RECORDS AND DATA BASE TABLES:

Level 1 Record	Level 1 Column(s)	Level 2 Record	Level 2 Column(s)	Level 3 Table(s)	Level 3 DB Column
Analysis	6-7	[illegible]	[illegible]	[illegible]	test_nam

ELEMENT SIZE AND CHARACTERISTICS:

6 alphanumeric characters, left justified

ELEMENT DESCRIPTION:

Code to identify the analyte or parameter being measured.

ACCEPTABLE CRITERIA:

- Required on all chemical and radiological records
- Must match one of the acceptable codes listed below
- For unknowns, must be within the range of UNK001 through UNK999
- Lab must be certified for the specific Test Name except when one of the following conditions exists:

    Method is semiquantitative screening
    Method is non-USATHAMA approved
    Method is "99"
    Method is "00", which is valid for the following Test Names:

ACIDIT	COD	REACTY
ALK	COLI	SALINE
ALKBIC	COLOR	SALINI
ALKCAR	COND	SSOL
ALKHYD	CORRTY	TASTE
ALKPHE	CROCO	TDS
ALPHAG	DO	TEMP
AMOS	DOC	TOC
ANPHO	EPTOX	TOX
ASBEST	HARD	TPHC
BETAG	IGNIT	TREACT
BOD	ODOR	TSOLID
CHARD	OILGR	TSS
CHRYS	PH	TURBID

> NOTE: For unknown compounds, use the code "UNKXXX" where "XXX" represents the number assigned by the field lab to the unknowns from 001 thru 999. The numbers are full field, so "unknown one" would be expressed as "UNK001" with the zeros included. The description of what "UNK001" represents will be defined in the contractor's reports and other documentation and be consistent within the same installation. Therefore "UNK001" can only represent one unique known for each installation.

ACCEPTABLE ENTRIES:

Chemical and Radiological Data:

(Sorted alphabetically by Test-Name code)

01NHCL	0.1N Hydrochloric acid
10CUDM	10-Cyclopentylundecanoic acid, methyl ester
10MEOH	10% Methanol
10MUDM	10-Methylundecanoic acid, methyl ester
10OEME	10-Octadecenoic acid, methyl ester
111TCE	1,1,1-Trichloroethane
112TCE	1,1,2-Trichloroethane
113MCH	1,1,3-Trimethylcyclohexane
11C1PE	1,1-Dichloro-1-propene
11DCE	1,1-Dichloroethylene / 1,1-Dichloroethene
11DCLE	1,1-Dichloroethane
11DMEB	(1,1-Dimethylethyl) benzene
11DPH	1,1-Diphenylhydrazine
11MCPE	1,1-Dimethylcyclopentane
1234MB	1,2,3,4-Tetramethylbenzene
123CPR	1,2,3-Trichloropropane
123MCH	1,2,3-Trimethylcyclohexane
123TCB	1,2,3-Trichlorobenzene
123TMB	1,2,3-Trimethylbenzene
124MCH	1,2,4-Trimethylcyclohexane
124TCB	1,2,4-Trichlorobenzene
124TMB	1,2,4-Trimethylbenzene
12DBD4	1,2-Dichlorobenzene-D4
12DBRE	1,2-Dibromoethane
12DCD4	1,2-Dichloroethane-D4
12DCE	1,2-Dichloroethenes / 1,2-Dichloroethylenes (cis and trans isomers)
12DCLB	1,2-Dichlorobenzene
12DCLE	1,2-Dichloroethane
12DCLP	1,2-Dichloropropane

ACCEPTABLE ENTRIES: (Cont.)

12DMB	1,2-Dimethylbenzene / o-Xylene
12DNAP	1,2-Dimethylnaphthalene
12DPB	1,2-Diphenylbenzene
12DPH	1,2-Diphenylhydrazine
12EPCH	Cyclohexene oxide / 1,2-Epoxycyclohexane
12EPEB	1,2-Epoxyethylbenzene / Styrene oxide
12MCPE	1,2-Dimethylcyclopentane
12MTDM	12-Methyltetradecanoic acid, methyl ester
12TMCP	1,1,2,2-Tetramethylcyclopropane
135MCH	1,3,5-Trimethylcyclohexane
135TMB	1,3,5-Trimethylbenzene
135TNB	1,3,5-Trinitrobenzene
13CPDO	1,3-Cyclopentanedione
13DBD4	1,3-Dichlorobenzene-D4
13DCLB	1,3-Dichlorobenzene
13DCP	1,3-Dichloropropane
13DCPE	1,3-Dichloropropene
13DEB	1,3-Diethylbenzene
13DFB	1,3-Difluorobenzene
13DMB	1,3-Dimethylbenzene / m-Xylene
13DMBB	(1,3-Dimethylbutyl) benzene
13DMCH	1,3-Dimethylcyclohexane
13DNAP	1,3-Dimethylnaphthalene
13DNB	1,3-Dinitrobenzene
13DPPR	1,1'-(1,3-Propanediyl) bis(benzene) / 1,3-Diphenylpropane
13HIND	1,3-Dihydro-2H-indol-2-one
13MCPE	1,3-Dimethylcyclopentane
13TDAM	13-Tetradecynoic acid, methyl ester
14DEEB	1,4-Dimethyl-2-ethylbenzene
14DACB	1,4-Diacetylbenzene
14DBD4	1,4-Dichlorobenzene-D4
14DCBU	1,4-Dichlorobutane
14DCLB	1,4-Dichlorobenzene
14DFB	1,4-Difluorobenzene
14DIOX	1,4-Dioxane
14DMB	1,4-Dimethylbenzene / p-Xylene
14DMCH	1,4-Dimethylcyclohexane
14DMNP	1,4-Dihydro-1,4-methanonaphthalene
[illegible]	[illegible]
14DNB	1,4-Dinitrobenzene
14HXDE	1,4-Hexadiene

ACCEPTABLE ENTRIES: (Cont.)

14MPME	14-Methylpentadecanoic acid, methyl ester
15DNAP	1,5-Dimethylnaphthalene
15MHME	15-Methylhexadecanoic acid, methyl ester
167TMN	1,6,7-Trimethylnaphthalene
16DMIN	1,6-Dimethylindan
16DNAP	1,6-Dimethylnaphthalene
16MHME	16-Methylheptadecanoic acid, methyl ester
17PTCE	17-Pentatriacontene
18DNAP	1,8-Dimethylnaphthalene
1HO18D	1,2,3,4,4A,5,8,8A-Octahydro-1,4,5,8-dimethanol-naphthalen-2-ol
1A3MPZ	1-Acetyl-3-methyl-5-pyrazolone
1A4HMB	1-Acetyl-4-(1-hydroxy-1-methylethyl) benzene
[illegible]	[illegible]
1C3L	1-Propanol
1C4L	1-Butanol
1CDMPZ	1-Carbamoyl-3,5-dimethyl-2-pyrazoline
1CH	1-Chlorohexane
1CL24H	1-Chloro-2,4-hexadiene
1CLODC	1-Chlorooctadecane
1CNAP	1-Chloronaphthalene
1DODCL	1-Dodecanol
1E24DB	1-Ethyl-2,4-dimethylbenzene
1E2MB	1-Ethyl-2-methylbenzene
1EMB	1-Ethylbenzylbenzene
1EPB	1-Ethylpropylbenzene
1FNAP	1-Fluoronaphthalene
1HPDOL	1-Heptadecanol
1HX3OL	1-Hexen-3-ol
1HXE	1-Hexene
1M2PPC	1-Methyl-2-(2-propenyl) cyclopentane
1M7MEN	1-Methyl-7-(1-methylethyl) naphthalene
1MBAAN	1-Methylbenz (A) anthracene
1MCPNE	1-Methylcyclopentene
1MDB	1-Methyldecylbenzene
1MECHX	1-Methylethylcyclohexane
1MECPR	1-Methylethylcyclopropane
1MEIND	1-Methylindan
1MFLRE	1-Methyl-9H-fluorene
1MNAP	1-Methylnaphthalene
1MNB	1-Methylnonylbenzene
1MPRB	(1-Methylpropyl) benzene

ACCEPTABLE ENTRIES: (Cont.)

1MPYR	1-Methylpyrene
1MX1PE	1-Methoxy-1-propene
1N2ONE	1-Nitro-2-octanone
1NAPA	1-Naphthylamine
1NHP	1-Nitroheptane
1NKCL	1.0N Potassium chloride solution
1NPN	1-Nitropropane
1OCTOL	1-Octanol
1PECHX	1-Propenylcyclohexane
1PNAP	1-Phenylnaphthalene
1TBCHA	1-t-Butylcyclohexanecarboxylic acid
210DMU	2,10-Dimethylundecane
2255CB	2,2',5,5'-Tetrachlorobiphenyl
225TCB	2,2',5-Trichlorobiphenyl
226TMO	2,2,6-Trimethyloctane
22DMC4	2,2-Dimethylbutane
2345CB	2,3,4,5-Tetrachlorobiphenyl
2346CP	2,3,4,6-Tetrachlorophenol
2356CP	2,3,5,6-Tetrachlorophenol
235TCP	2,3,5-Trichlorophenol
235TMD	2,3,5-Trimethyldecane
236TMN	2,3,6-Trimethylnaphthalene
237TMO	2,3,7-Trimethyloctane
23C1PE	2,3-Dichloro-1-propene
23D2HL	2,3-Dimethyl-2-hexanol
23DCLP	2,3-Dichlorophenol
23DMC4	2,3-Dimethylbutane
23DMC5	2,3-Dimethylpentane
23DMP	2,3-Dimethylphenol
23DNAP	2,3-Dimethylnaphthalene
23TMP	2,2,3,3-Tetramethylpentane
245PCB	2,2',4,5,5'-Pentachlorobiphenyl
245T	2,4,5-Trichlorophenoxyacetic acid
245TCP	2,4,5-Trichlorophenol
245TP	2-(2,4,5-Trichlorophenoxy) Propionic Acid
246MPY	2,4,6-Trimethylpyridine
246TBP	2,4,6-Tribromophenol
246TCA	2,4,6-Trichloroaniline
246TCP	2,4,6-Trichlorophenol
246TMO	2,4,6-Trimethyloctane
246TNP	2,4,6-Trinitrophenol / Picric acid

ACCEPTABLE ENTRIES: (Cont.)

246TNR	2,4,6-Trinitroresorcinol / Styphnic acid
246TNT	2,4,6-Trinitrotoluene / alpha Trinitrotoluene
247HXI	2,2,4,4,7,7-Hexamethyloctahydro 1H indene
247TMO	2,4,7-Trimethyloctane
24D	2,4-Dichlorophenoxyacetic acid
24DB	4-(2,4-Dichlorophenoxy)butyric acid / 2,4-DB
24DCB	2,4'-Dichlorobiphenyl
24DCLP	2,4-Dichlorophenol
24DMC5	2,4-Dimethylpentane
24DMD	2,4-Dimethyldecane
24DMHX	2,4-Dimethylhexane
24DMPN	2,4-Dimethylphenol
24DNP	2,4-Dinitrophenol
24DNT	2,4-Dinitrotoluene
24M2PL	2,4-Dimethyl-2-pentanol
24NPD3	2,4-Dinitrophenol-D3
24T13P	2,2,4-Trimethyl-1,3-pentanediol
256TMD	2,5,6-Trimethyldecane
25C14D	2,5-Cyclohexadien-1,4-dione
25DCLP	2,5-Dichlorophenol
25DMP	2,5-Dimethylphenol
25DMPA	2,5-Dimethylphenanthrene
25DTHF	2,5-Dimethyltetrahydrofuran
25ETHF	2,5-Diethyltetrahydrofuran
25HPCB	2,2',3,4,5,5',6-Heptachlorobiphenyl
25HXCB	2,2',3,4,5,5'-Hexachlorobiphenyl
25OCCB	2,2',3,3',4,4',5,5'-Octachlorobiphenyl
2611MD	2,6,11-Trimethyldodecane
26DBMP	2,6-Di-tert-butyl-4-methylphenol / 2,6-Di-tert-butyl-4-cresol
26DCLP	2,6-Dichlorophenol
26DMO	2,6-Dimethyloctane
26DMP	2,6-Dimethylphenol
26DMST	2,6-Dimethylstyrene
26DMUD	2,6-Dimethylundecane
26DNA	2,6-Dinitroaniline
26DNT	2,6-Dinitrotoluene
26HPCB	2,2',3,4,4',5,6-Heptachlorobiphenyl
27DMO	2,7-Dimethyloctane
27DNAP	2,7-Dimethylnaphthalene
29DMUD	2,9-Dimethylundecane
2A46DA	2-Amino-4,6-dinitroaniline

ACCEPTABLE ENTRIES: (Cont.)

2A46DT	2-Amino-4,6-dinitrotoluene
2A4NT	2-Amino-4-nitrotoluene
2B1CP	2-Bromo-1-chloropropane
2B1OOL	2-Butyl-1-octanol
2B4MFU	2-(t-butyl)-4-methylfuran
2BEETO	2-(2-N-Butoxyethoxy) ethanol
2BEMDE	2,2-Bis(ethylmercapto) diethyl ether
2BMMPR	2,2-Bis(methylmercapto) propane
2BNMNM	2-Butyl-N-methylnorleucine, methyl ester
2BRHXA	2-Bromohexanoic acid
2BUTHF	2-Butyltetrahydrofuran
2BUXEL	2-Butoxyethanol
2C4E	2-Butene
2C6MFZ	2-Chloro-6-methoxy-10H-phenothiazine
2C7O	2-Heptanone / Methylpentyl ketone
2CBMN	o-Chlorobenzylidine malononitrile
2CECHO	2-(2-Cyanoethyl) cyclohexanone
2CH46D	2-Cyclohexyl-4,6-dinitrophenol
2CHAEE	2-Cyclopentene-1-hendecanoic acid, ethyl ester
2CHE1L	2-Cyclohexen-1-ol
2CHE1O	2-Cyclohexen-1-one
2CLBP	2-Chlorobiphenyl
2CLEVE	(2-Chloroethoxy) ethene / 2-Chloroethylvinyl ether
2CLP	2-Chlorophenol
2CLPD4	2-Chlorophenol-D4
2CLT	2-Chlorotoluene
2CMCHO	2-(Cyanomethyl) cyclohexanone
2CNAP	2-Chloronaphthalene
2DMPEN	2,2-Dimethylpentane
2E1HXL	2-Ethyl-1-hexanol
2E2HPD	2-Ethyl-2-hydroxymethyl-1, 3-propanediol
2E4MPL	2-Ethyl-4-methyl-1-pentanol
2EHXA	2-Ethylhexanoic acid
2ECYBL	2-Ethylcyclobutanol
2EP	2-Ethylphenol
2FBP	2-Fluorobiphenyl
2FNAP	2-Fluoronaphthalene
2FP	2-Fluorophenol
2HBDDM	2-Hydroxybutanedioic acid, dimethyl ester
2HBNZL	2-Hydroxybenzaldehyde / Salicylaldehyde
2HNDOL	2-Hendecanol / 2-Undecanol

ACCEPTABLE ENTRIES: (Cont.)

2HYBP	2-Hydroxybiphenyl
2M1DDL	2-Methyl-1-dodecanol
2M1PNE	2-Methyl-1-pentene
2M24P	2-Methyl-2,4-pentanediol
2M2BDA	2-Methyl-2-butenethioamide
2M2C3L	2-Methyl-2-propanol / tert-Butanol
2M2H3B	2-Methyl-2-hydroxy-3-butyne
2M3HXE	2-Methyl-3-hexene
2M3PNO	2-Methyl-3-pentanone
2MBZA	2-Methylbenzyl alcohol
2MC3	2-Methylpropane / Isobutane
2MC4	2-Methylbutane / Isopentane
2MC6	2-Methylhexane / Isoheptane
2MC7	2-Methylheptane / Isooctane
2MCPNE	2-Methylcyclopentanone
2MCYPL	2-Methylcyclopentanol
2MDEC	2-Methyldecane
2MDOD	2-Methyldodecane
2MENAP	2-(1-Methylethyl) naphthalene
2MEODE	2-Methyloctadecanoic acid
2MEPEN	2-Methylpentane
2MMECO	2-Methyl-5-(1-methylethyl)-2-cyclohexen-1-one
2MNAP	2-Methylnaphthalene
2MP	2-Methylphenol / 2-Cresol
2MPA1E	2-Isobutyric acid
2MPAHT	2-Methylpropanoic acid, 3-hydroxy-2,4,4-trimethyl-1,3-propanediyl ester
2MPAME	2-Methylpropanoic acid, methyl ester
2MPEAE	2-Methyl-2-propenoic acid, 1,2-ethanediyl ester
2MPYR	2-Methylpyrene
2MTETD	2-Methyltetradecane
2MTHF	2-Methyltetrahydrofuran
2MTHPM	2-Methylthio-4-hydroxypyrimidine
2MX1PE	2-Methoxy-1-propene
2MXEXL	2-(2-Methoxyethoxy) ethanol / Diethyleneglycol monomethyl ether
2MXMC3	2-Methoxy-2-methylpropane / tert-Butylmethyl ether
2MXTMB	2-Methoxy-2,3,3-trimethylbutane
2N3C	3-Methyl-2-nitrophenol / 2-Nitro-m-cresol
2NANIL	2-Nitroaniline
2NAPA	2-Naphthylamine
2NBZLZ	2-Nitrobenzanilide
2NKCL	2.0N Potassium chloride solution

ACCEPTABLE ENTRIES: (Cont.)

2NNDPA	2-Nitro-N-nitrosodiphenylamine
2NODCO	2-Nonadecanone
2NP	2-Nitrophenol
2NPN	2-Nitropropane
2NT	2-Nitrotoluene
2OXBEL	2,2-Oxybis(ethanol) (obsolete - use DEGLYC)
2PETOH	2-Phenylethanol
2PHXEL	2-Phenoxyethanol
2PICO	2-Picoline
2PNAP	2-Phenylnaphthalene
2PROL	2-Propanol
2PXEXL	2-(2-Phenoxyethoxy) ethanol
2SB46D	2-sec-Butyl-4,6-dinitrophenol
2TCLEA	1,1,1,2-Tetrachloroethane
2TMHPD	2,6,10,14-Tetramethylheptadecane
2TMPD	2,6,10,14-Tetramethylpentadecane
33DCBD	3,3'-Dichlorobenzidine
33DMHX	3,3-Dimethylhexane
33DMPN	3,3-Dimethylpentane
344TPE	3,4,4-Trimethyl-2-pentene
345T1H	3,4,5-Trimethyl-1-hexene
34BZFA	3,4-Benzofluoranthene
34CBD6	3,3',4,4'-Tetrachlorobiphenyl-D6
34D1DE	3,4-Dimethyl-1-decene
34DCLP	3,4-Dichlorophenol
34DMP	3,4-Dimethylphenol
35DMP	3,5-Dimethylphenol
35DNA	3,5-Dinitroaniline
35DNP	3,5-Dinitrophenol
35DNT	3,5-Dinitrotoluene
35M3HL	3,5-Dimethyl-3-hexanol
36DF9O	3,6-Dichlorofluoren-9-one
36DMO	3,6-Dimethyloctane
36TMPA	3,4,5,6-Tetramethylphenanthrene
37DMNN	3,7-Dimethylnonane
38DMUD	3,8-Dimethylundecane
3BPETH	3-Butenylpentyl ether
3C1C3E	3-Chloro-1-propene / Allyl chloride
3CHXD	3-Cyclohexyldecane
3CLP	3-Chlorophenol
3CLT	3-Chlorotoluene

ACCEPTABLE ENTRIES: (Cont.)

3CMCH	3-(Chloromethyl) cyclohexene
35CHEO	3,5-Dimethyl-2-cyclohexen-1-one
3E22MP	3-Ethyl-2,2-dimethylpentane / 3-(t-Butyl)-pentane
3E25DH	3-Ethyl-2,5-dimethyl-3-hexene
3EE2BO	3,4-Epoxy-3-ethyl-2-butanone
3EEBOD	3-Ethyl-5-(2-ethylbutyl) octadecane
3EHXDE	3-Ethyl-1,4-hexadiene
3EP	3-Ethylphenol
3HDMPL	3-(Hydroxymethyl)-4,4-dimethylpentanol
3HDMPT	3-Hydroxy-2,7-dimethyl-4-(3H)-pteridinone
3HXE2O	3-Hexen-2-one
3HYBA	3-Hydroxybenzaldehyde
3M1PL	3-Methyl-1-pentanol
3M2C1O	3-Methoxy-2-cyclopenten-1-one
3M2CSE	3-Methyl-2-pentene
3M2CHO	3-Methyl-2-cyclohexen-1-one
3M2HXL	3-Methyl-2-hexanol
3M5PHN	3-Methyl-5-propylnonane
3MBP	3-Methylbiphenyl
3MC6	3-Methylhexane
3MCA	3-Methylcholanthrene
3MCHRY	3-Methylchrysene
3MDEC	3-Methyldecane
3MEPEN	3-Methylpentane
3MP	3-Methylphenol / 3-Cresol
3MPANR	3-Methylphenanthrene
3MUND	3-Methylundecane
3MXIMZ	3-Methoxyindazole
3MXT	3-Methoxytoluene
3NANIL	3-Nitroaniline
3NT	3-Nitrotoluene
3OCTOL	3-Octanol
3OPPAE	3-Oxo-3-phenylpropanoic acid, ethyl ester
3PC3AC	3-Phenylpropanoyl chloride/Hydrocinnamoyl chloride
3PT	3-Propyltoluene
3S5E3L	(3beta)-Stigmast-5-en-3-ol
3TBUP	3-(t-Butyl) phenol
3TCHEO	3,5,5-Trimethyl-2-cyclohexen-1-one
41MEHP	4-(1-Methylethyl) heptane
44DCBZ	4,4'-Dichlorobenzophenone
44DFBZ	4,4-Difluorobenzophenone

ACCEPTABLE ENTRIES: (Cont.)

44DMPE	4,4-Dimethyl-2-pentene
44DMUD	4,4-Dimethylundecane
468T1N	4,6,8-Trimethyl-1-nonene
46DN2C	2-Methyl-4,6-dinitrophenol / 4,6-Dinitro-2-cresol
47DMUD	4,7-Dimethylundecane
48DMHD	4,8-Dimethylhexadecane
4A2NT	4-Amino-2-nitrotoluene
4A35DT	4-Amino-3,5-dinitrotoluene
4ABP	4-Aminobiphenyl
4AMORP	4-Acetylmorpholine
4B3P2O	4-Butoxy-3-penten-2-one
4BFB	4-Bromofluorobenzene
4BRPPE	4-Bromophenylphenyl ether
4C3MBE	4-Chloro-3-methyl-1-butene
4CANIL	4-Chloroaniline
4CCHXL	4-Chlorocyclohexanol
4CL2C	2-Methyl-4-chlorophenol / 4-Chloro-2-cresol
4CL3C	3-Methyl-4-chlorophenol / 4-Chloro-m-cresol / 4-Chloro-3-cresol
4CLPPE	4-Chlorophenylphenyl ether
4CLT	4-Chlorotoluene
4DM2PL	4,4-Dimethyl-2-pentanol
4E2OCE	4-Ethyl-2-octene
4ETMHP	4-Ethyl-2,2,6,6-tetramethylheptane
4FANIL	4-Fluoroaniline
4FT	4-Fluorotoluene
4H35BA	4-Hydroxy-3,5-dimethoxybenzaldehyde
4H3MBA	4-Hydroxy-3-methoxybenzaldehyde / Vanillin
4HAZOB	4-Hydroxyazobenzene
4HYBA	4-Hydroxybenzaldehyde
4IOMQU	4-Iodomethylquinuclidine
4M2PPL	4-Methyl-2-propyl-1-pentanol
4MBP	4-Methylbiphenyl
4MBSA	4-Methylbenzene sulfonamide
4MC7	4-Methylheptane
4MDBFU	4-Methyldibenzofuran
4MEMPA	4-(1-Methylethyl)-N-phenylaniline
4MFLRE	4-Methyl-9H-fluorene
4MMBHE	4-Methyl-1-(1-methylethyl)-bicyclo[3.1.0]hex-2-ene
4MP	4-Methylphenol / 4-Cresol
4MPANR	4-Methylphenanthrene
4MPYR	4-Methylpyrene

ACCEPTABLE ENTRIES: (Cont.)

4MXCHL	4-Methoxycyclohexanol
4MXP	4-Methoxyphenol
4NANIL	4-Nitroaniline
4NP	4-Nitrophenol
4NT	4-Nitrotoluene
4TBU2C	2-Methyl-4-(t-butyl) phenol / 4-t-Butyl-2-cresol
4TOP	4-t-Octylphenol
50H50A	50% Hexane - 50% acetone
50M50A	50% Methylene chloride - 50% acetone
50WMAN	50% Water - 25% Methanol - 25% acetonitrile
5CL2C	5-Chloro-o-cresol / 2-Methyl-5-chlorophenol
5E2MHP	5-Ethyl-2-methylheptane
5E5MD	5-Ethyl-5-methyldecane
5M2HXO	5-Methyl-2-hexanone
5M5HAL	5-Methyl-5-hydroxyhexanoic acid lactone
5N2OL	5-Norbornen-2-ol
5PTRID	5-Propyltridecane
6CL3C	3-Methyl-6-chlorophenol / 6-Chloro-3-cresol
6E6MFV	6-Ethyl-6-methylfulvene
6M3HPL	6-Methyl-3-heptanol
6MDOD	6-Methyldodecane
6MEPUR	6-Methylpurine
6MTRID	6-Methyltridecane
6TBU2C	2-Methyl-6-(t-butyl) phenol / 6-t-Butyl-2-cresol
712DMA	7,12-Dimethylbenz(A)anthracene
7MTRID	7-Methyltridecane
8M1NDL	8-Methyl-1,8-nonanediol
9FLENO	9-Fluorenone
9HFLRE	9H-Fluoren-9-one
9MBAAN	9-Methylbenz(A)anthracene
9MXANT	9-Methoxyanthracene
AACHXE	Acetic acid, cyclohexyl ester
AADMP	alpha,alpha-Dimethylphenethylamine
ABHC	alpha-Benzenehexachloride / alpha-Hexachlorocyclohexane
AC	Hydrogen cyanide / Hydrocyanic acid
AC228	Actinium 228
ACDHMW	Acids (high molecular weight)
ACET	Acetone
ACHE	Acetylcholinesterase
ACIDIT	Acidity
ACLDAN	alpha-Chlordane

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ACCEPTABLE ENTRIES (Cont.)

ACHLOR	alpha-Chlordane (obsolete-use ACLDAN)
ACNPD10	Acenaphthene D10
ACPHN	Acetophenone
ACROLN	Acrolein
ACRYLO	Acrylonitrile
ADHP	Ammonium dihydrogen phosphate
AENSLF	alpha-Endosulfan / Endosulfan I
AG	Silver
AL	Aluminum
ALAL	Aliphatic alcohols
ALDEHY	Aldehydes
ALDRN	Aldrin
ALHC	Aliphatic hydrocarbons
ALHMW	Alcohols (high molecular weight)
ALK	Alkalinity
ALKBIC	Alkalinity - bicarbonate
ALKCAR	Alkalinity - carbonate
ALKHYD	Alkalinity - hydroxide
ALKN	Alkanes
ALKPHE	Alkalinity - phenolphthalein
ALPGF	Alpha gross-field
ALPGL	Alpha gross-lab
ALPGLA	Alpha gross-soluble acid fraction
ALPGLW	Alpha gross-soluble water fraction
ALPHAG	Alpha gross
ALPHPN	alpha-Pinene
AMGD	Aminoguanidine
AMOS	Amosite asbestos
ANAPNE	Acenaphthene
ANAPYL	Acenaphthylene
ANELNT	Anion element
ANIL	Aniline
ANPHO	Anthophyllite asbestos
ANTRC	Anthracene
ANTRCN	9-Anthracenecarbonitrile
ANTRQU	9,10-Anthracenedione / Athraquinone
AS	Arsenic
ASBEST	Asbestos
ASEXT	Arsenic extractable
ASTOT	Arsenic total
ATNBA	2,4,6-Trinitrobenzaldehyde

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8.24 Test Name (Analyte)

ACCEPTABLE ENTRIES (Cont.)

ATNT	alpha-Trinitrotoluene (obsolete - use 246TNT)
ATZ	Atrazine
AU	Gold
AYLETH	Allyl ether
AZACN	Azacyclononane
AZM	Azinphos methyl
B	Boron
B2CEXM	Bis (2-chloroethoxy) methane
B2CIPE	Bis (2-chloroisopropyl) ether
B2CLEE	Bis (2-chloroethyl) ether
B2EHP	Bis (2-ethylhexyl) phthalate
BA	Barium
BAANTR	Benzo(A)anthracene
BAC	Benzal chloride
BAHXE	Butanoic acid, 1-hexyl ester
BAPYR	Benzo(A)pyrene
BBFANT	Benzo[B]fluoranthene
BBFLRE	Benzo[B]fluorene
BBHC	beta-Benzenehexachloride / beta-Hexachlorocyclohexane
BBNFN	Benzo[B]naphtho[2,3-D]furan
BBNTHP	Benzo[B]naphtho[1,2-D]thiophene
BBZP	Butylbenzyl phthalate
BCHPD	Bicyclo[2,2,1]hepta-2,5-diene
BCLDAN	beta-Chlordane
BCLME	Bis (chloromethyl) ether
BCMSO	Bis (carboxymethyl) sulfoxide
BCMSO2	Bis (carboxymethyl) sulfone
BCPHCE	2,2-Bis(chlorophenyl)chloroethylene (DDT related)
BCY3HX	Bicyclo[3,1,0]hexane
BDADME	Butanedioic acid, dimethyl ester
BDEANT	7H-Benz[DE]anthracen-7-one
BE	Beryllium
BE7	Beryllium 7
BEETO	1-(2-Butoxyethoxy) ethanol
BEGAG	Beta gamma gross
BENSLF	beta-Endosulfan / Endosulfan II
BENZA	Benzanthrone
BENZAL	Benzaldehyde
BENZID	Benzidine
BENZOA	Benzoic acid
BEP	2-Butoxyethanol phosphate

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ACCEPTABLE ENTRIES: (Cont.)

BEPYR	Benzo[E]pyrene
BETAG	Beta gross
BETGF	Beta gross-field
BETGL	Beta gross-lab
BETGLA	Beta gross-soluble acid fraction
BETGLW	Beta gross-soluble water fraction
BF2ANT	Benzofluoranthene
BGHIFA	Benzo[G,H,I]fluoranthene
BGHIPY	Benzo[G,H,I]perylene
BHC	BHC - nonspecific
BI	Bismuth
BI212	Bismuth 212
BI214	Bismuth 214
BICYHX	Bicyclohexyl
BMDN	1,5-Bis (1,1-dimethylethyl)-3,3-dimethylbicyclo[3.1.0]hexane-2-one
BINAP	Binaphthyl
BJFANT	Benzo[J]fluoranthene
BKFANT	Benzo[K]fluoranthene
BLDX	Bladex
BMP	Butylmethyl phthalate
BOD	Biological oxygen demand
BOLS	Bolstar
BPBG	Butylphthalyl butylglycolate
BR	Bromide
BRC6H5	Bromobenzene
BRCLM	Bromochloromethane
BRDCLM	Bromodichloromethane
BRMCIL	Bromacil
BTAZON	3-(1-Methylethyl)-1H-2,1,3-benzothiadiazin-4(3H)-one-2,2-dioxide / BENTAZON
BTC	Benzotrichloride
BTMSOA	Bis (trimethylsilyl) oxalic acid
BTZ	Benzothiazole
BUC6H5	Butylbenzene
BUEETH	Butylethyl ether
BZ	3-Quinuclidinyl benzilate
BZAL2M	alpha, alpha-Dimethylbenzenemethanol
BZALC	Benzyl alcohol
BZAPAN	Benzo[A]phenanthrene
BZCPAN	Benzo[C]phenanthrene
BZFANT	Benzfluoranthene

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8.24 Test Name (Analyte)

ACCEPTABLE ENTRIES: (Cont.)

BZHQUN	Benzo[H]quinoline
BZOAME	Benzoic acid, methyl ester / Methyl benzoate
BZONH4	Benzoic acid, ammonium salt
BZOTHP	Benzo[B]thiophene
BZOTRP	Benzo[B]triphenylene
BZOTRZ	1H-Benzotriazole / 1,2,3-Benzotriazole
BZPA	Benzenephosphonic acid
BZYLBR	Benzyl bromide / alpha-Bromotoluene
BZYLCL	Benzyl chloride
C10	Decane
C11	Hendecane
C12	Dodecane
C12AMM	8-Methyldecanoic acid, methyl ester
C12DCE	cis-1,2-Dichloroethylene / cis-1,2-Dichloroethene
C13	Tridecane
C13DCP	cis-1,3-Dichloropropylene / cis-1,3-Dichloropropene
C14	Tetradecane
C14A	Tetradecanoic acid / Myristic acid
C14AME	Tetradecanoic acid, methyl ester
C15	Pentadecane
C15A	Pentadecanoic acid
C16	Hexadecane
C16A	Hexadecanoic acid / Palmitic acid
C16ABE	Hexadecanoic acid, butyl ester
C16ADM	Hexadecanoic acid, dimethyl ester
C16AEH	Hexadecanoic acid, bis (2-ethylhexyl) ester
C16AME	Hexadecanoic acid, methyl ester
C16SAT	Saturated hydrocarbons (C16)
C17	Heptadecane
C17A	C17 alkane
C17AM	Heptadecanoic acid, methyl ester
C18	Octadecane
C18SFP	Bis (pentafluorophenyl) phenyl phosphine
C18A	C18 alkane
C18ABE	Octadecanoic acid, butyl ester
C18AE	Octadecanoic acid, ethyl ester
C18AME	Octadecanoic acid, methyl ester
C18AOD	Octadecanoic acid, octadecyl ester
C18UNS	C18H30O Unknown
C19	Nonadecane
C19A	Nonadecanoic acid

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ACCEPTABLE ENTRIES (Cont.)

C1ADMF	Carbonic acid, dimethyl ester
C20	Eicosane
C21	Heneicosane
C22UNS	C22H40O Unknown
C25	Pentacosane
C2AEE	Acetic acid, ethyl ester / Ethyl acetate
C2AVE	Acetic acid, vinyl ester / Vinyl acetate
C2H3CL	Chloroethene / Vinyl chloride
C2H5CL	Chloroethane
C30AME	Triacontanoic acid, methyl ester
C35	Pentatriacontane
C36	Hexatriacontane
C3A2MB	Propanoic acid, 2-methylbutyl ester
C3AME	Propanoic acid, methyl ester
C4	Butane
C4HXIL	cis-4-Hexen-1-ol
C5A	Pentanoic acid / Valeric acid
C6D6	Benzene-D6
C6H6	Benzene
C6HOH	Cyclohexanol
C7	Heptane
C7A	Heptanoic acid
C7HB1	Heptachloronorbornene
C8	Octane
C8A	C8 alkane
C8AME	Octanoic acid, methyl ester
C9	Nonane
CA	Calcium
CAAH	Chloroacetaldehyde
CACO3S	Calcium carbonate solution
CALLMW	Hydrocarbons (all molecular weights)
CAMBEN	3-Amino-2,5-dichlorobenzoic acid / CHLORAMBEN
CAME	Carbamic acid, methyl ester
CAMP	Camphor
CAPLCT	Caprolactam / 6-Aminohexanoic acid lactam
CARBAZ	9H-Carbazole
CATOL	Catechol
CBA	o-Chlorobenzaldehyde
CBCCH	cis-1-Bromo-2-chlorocyclohexane
CBOA	o-Chlorobenzoic acid
CC3	3ClCC3

ACCEPTABLE ENTRIES: (Cont.)

CCL2F2	Dichlorodifluoromethane
CCL3F	Trichlorofluoromethane
CCL4	Carbon tetrachloride
CCLDAN	cis-Chlordane
CCLF	Chlorofluoromethane
CCLF2	Chlorodifluoromethane
CCLF3	Trifluorochloromethane
CD	Cadmium
CD2CL2	Methylene chloride-D2
CDACH	cis-1,2-Diacetoxycyclohexane
CDCBU	cis-1,4-Dichloro-2-butene
CDCL3	Chloroform-D
CDNBIS	Chlorodinitrobenzene isomer
CE	Cerium
CE141	Cerium 141
CE144	Cerium 144
CEC	Cation exchange capacity
CG	Phosgene / Carbonyl chloride
CH2BR2	Methylene bromide
CH2CL2	Methylene chloride
CH3BR	Bromomethane
CH3CL	Chloromethane
CH3CN	Acetonitrile
CH4	Methane
CHARD	Calculated Hardness
CHBR3	Bromoform
CHCL3	Chloroform
CHNO	Ethanolamine
CHNO2	Diethanolamine
CHO	1,2-Cyclohexane oxide
CHOLA	Cholestane
CHONE	Cyclohexanone
CHRY	Chrysene
CHRYS	Chrysotile asbestos
CK	Cyanogen chloride
CL	Chloride
CL2	Chlorine
CL2ACN	Dichloroacetonitrile
CL2BP	Dichlorobiphenyls
CL2BZ	Dichlorobenzenes
CL2CH2	Dichloromethane

ACCEPTABLE ENTRIES: (Cont.)

CL2NAP	Dichloronaphthalenes
CL3BP	Trichlorobiphenyls
CL3CDE	Trichloropropenes
CL3NAP	Trichloronaphthalenes
CL3P	Trichlorophenols
CL4BP	Tetrachlorobiphenyls
CL4NAP	Tetrachloronaphthalenes
CL5B	Pentachlorobenzene
CL5BP	Pentachlorobiphenyls
CL5ET	Pentachloroethane
CL6BP	Hexachlorobiphenyls
CL6BZ	Hexachlorobenzene
CL6CP	Hexachlorocyclopentadiene
CL6ET	Hexachloroethane
CL7BP	Heptachlorobiphenyls
CL7NB	Heptachloronorbornadienes
CLC2A	Chloroacetic acid
CLC6D5	Chlorobenzene-D5
CLC6H5	Chlorobenzene
CLCYHX	Chlorocyclohexane
CLD	Chlorine demand
CLDAN	Chlordane
CLDEN	Chlordene
CLNAP	Chloronaphthalenes
CLO3	Chlorate
CLP	Chlorophenols
CLVRA	2-Chlorovinyl arsonic acid
CLXB	Chlorinated benzenes
CLXNAP	Chlorinated naphthalenes
CMME	Chloromethyl methyl ether
CMONOX	Carbon monoxide
CN	Chloroacetophenone
CO	Cobalt
CO2	Carbon dioxide
CO3	Carbonate
CO57	Cobalt 57
CO60	Cobalt 60
COD	Chemical oxygen demand
COLI	Fecal coliform
COLOR	Color
COND	Specific conductivity

ACCEPTABLE ENTRIES: (Cont.)

COND-F	Specific conductivity as tested in the field
CORRTY	Corrosivity (tendency to corrode)
COUMA	Coumaphos
COUMRN	2,3-Dihydrobenzofuran / Coumaran
CPCIAL	Cyclopentanecarboxaldehyde
CPMS	p-Chlorophenylmethyl sulfide
CPMSO	p-Chlorophenylmethyl sulfoxide
CPMSO2	p-Chlorophenylmethyl sulfone
CPO	Cyclopentanone
CPYR	Chlorpyrifos
CR	Chromium
CRHEX	Hexavalent chromium
CRO4	Chromate
CROCO	Crocidolite asbestos
CRYOF	Cryoflex
CS	Cesium
CS134	Cesium 134
CS137	Cesium 137
CS2	Carbon disulfide
CSOL	Cresols
CT	Chlorotoluene
CU	Copper
CUEXT	Copper extractable
CUTOT	Copper total
CX	Phosgene oxime / Dichloroformoxime
CYDODC	Cyclododecane
CYHX	Cyclohexane
CYHXB	Cyclohexylbenzene / Phenylcyclohexane
CYHXE	Cyclohexene
CYN	Cyanide
CYNAM	Amenable cyanide
CYNF	Cyanide, free form
CYOCTE	Cyclooctatetraene
CYPD	Cyclopentadiene
CYPNE	Cyclopentene
CYSD12	Chrysene-D12
DALA	2,2-Dichloropropionic acid / Dalapon
DBABA	Dibenz[A,B]anthracene
DBAHA	Dibenz[A,H]anthracene
DBAJA	Dibenz[A,J]acridine
DBATTS	2,4-Dihydroxybenzoic acid, tris-trimethylsilyl

ACCEPTABLE ENTRIES: (Cont.)

DBCP	Dibromochloropropane
DBHC	delta Benzenehexachloride / delta-Hexachlorocyclohexane
DBRCLM	Dibromochloromethane
DBRDCM	Dibromodichloromethane
DBTSPY	4,5-Dimethyl-2,6-bis (trimethylsiloxy) pyrimidine
DBUCLE	Dibutylchlorendate
DBZFUR	Dibenzofuran
DBZTHP	Dibenzothiophene
DCAA	2,4-Dichlorophenyl acetic acid / DCAA
DCAMBA	Dicamba / 2-Methoxy-3,6-dichlorobenzoic acid
DCBPH	Dichlorobenzophenone
DCHP	Dicyclohexyl phthalate
DCLB	Dichlorobenzene - nonspecific
DCMBF	5,7-Dichloro-2-methylbenzofuran
DCMPSX	Decamethylcyclopentasiloxane
DCPA	2,3,5,6-Tetrachloro-1,4-benzenedicarboxylic acid dimethyl ester / Dacthal
DCPD	Dicyclopentadiene
DCPL	Dichlorophenlactic
DDVP	Vapona
DEA	Diethylamine
DECYLB	Decylbenzene
DEDMP	Diethyldimethyl diphosphonate
DEETH	Diethyl ether
DEGLYC	2,2-Oxybis[ethanol] / Diethylene glycol
DEMBZA	N,N-Diethyl-3-methylbenzamide
DEMO	Demeton-O
DEMS	Demeton-S
DEP	Diethyl phthalate
DEPD4	Diethyl phthalate-D4
DHBZPY	3,4-Dihydro-2H-1-benzopyran
DHDMAC	9,10-Dihydro-9,9-dimethylacridine
DIACAL	Diacetone alcohol / 4-Hydroxy-4-methyl-2-pentanone
DIADS	Bis (diisopropylaminoethyl) disulfide
DIAEL	Bis (diisopropylamino) ethanol
DIAEP	S-Diisopropylaminoethyl methylphosphonothioate
DIAET	Bis (diisopropylamino) ethanethiol
DIAS	Bis (diisopropylamino) ethylsulfide
DIASO2	Bis (diisopropylamino) ethylsulfone
DIAZ	Diazinon
DIBP	Diisobutyl phthalate
DICLP	Dichlorophenols

ACCEPTABLE ENTRIES (Cont.)

DICP	2-(2,4-Dichlorophenoxy)propionic acid / DICHLORPROP
DIDDP	Diisopropyldimethyl diphosphonate
DH2O	Deionized water
DIMP	Diisopropyl methylphosphonate
DINO	2,4-Dinitro-6-sec-butylphenol / DINOSEB
DIOP	Diisooctyl phthalate
DIPETH	Diisopropyl ether
DIPK	Diisopropyl ketone / Dimethyl-2-propanone
DIPUR	Diisopropyl urea
DITH	Dithiane
DL2HPG	dl-2-(3-Hydroxyphenyl) glycine
DLDRN	Dieldrin
DM	Adamsite
DM1ACH	2,2-Dimethyl-1-acetylcyclohexane
DMA	Dimethylaniline (obsolete - use NNDMA)
DMCAR	Dimethyl dithiocarbonate
DMCP	Dimethylcyclopentane - nonspecific
DMCPDE	1,2-Dimethylcyclopentadiene
DMDS	Dimethyl disulfide
DMEBZO	4-(1,1-Dimethylethyl)benzoic acid
DMETDA	N,N-Dimethyl-1,2-ethanediamine
DMETH	Dimethyl ether
DMIP	Dimethyl isophthalate
DMMP	Dimethyl methylphosphate
DMOATE	Dimethoate
DMP	Dimethyl phthalate
DMPCHE	3-(2,2-Dimethylpropoxy) cyclohexene
DMPHEN	Dimethyl phenol / Dimethylhydroxy benzene
DMPTHF	2,2-Dimethyl-5-(1-methylpropyl) tetrahydrofuran
DMXDMS	Dimethoxydimethylsilane
DNBEE	1,1-Di-n-butylethylene / 1,1-Di-n-butylethene
DNBP	Di-N-butyl phthalate
DNOP	Di-N-octyl phthalate
DNOPD4	Di-N-octyl phthalate-D4
DNPP	Di-N-pentyl phthalate
DNTISO	Dinitrotoluene isomer
DO	Dissolved oxygen
DOAD	Dioctyl adipate / Hexanedioic acid, dioctyl ester
DOAZ	Dioctyl azelate
DOC	Dissolved organic carbon
DODBCB	Dodecylbenzene

ACCEPTABLE ENTRIES: (Cont.)

DOETH	Dioctyl ether
DOPAM	4-(2-Aminoethyl) pyrocatechol / Dopamine
DPA	Diphenylamine
DPETH	Diphenyl ether
DPETYN	1,1-(1,2-Ethynediyl)bis(benzene)
DPH	Diphenylhydrazines - nonspecific
DPHNY	Diphenyl
DPNTLL	D-(-)-Pantolactone
DPSO	Diphenyl sulfoxide
DPSULF	1,1-Thiobis(benzene) / Diphenyl sulfide
DRBM	Dibromomethane
DSEDIN	Dioxane diindole
DSTON	Disulfoton
DTB4C	2,6-Di-tert-butyl-4-cresol (obsolete - use 26DB4MP)
DTCHBO	1.alpha.(E),4.alpha.-1-(1,4-Dihydroxy-2,6,6-trimethyl-2-cyclohexen-1-yl)-2-buten-1-one
DURS	Dursban
DYSCAN	GC-MS dye scan
EA2192	S-2-Diisopropylaminoethyl methylphosphonic acid
EBCPGL	Ethyl-2,2-bis (4-chlorophenyl) glycolate
ED	Dichloroethyl arsine
EDBDAS	3-Phenylpropanol
EGMEE	Ethylene glycol, monoethyl ether / 1,1-Oxybis(2-ethoxy) ethane
EICOSL	1-Eicosanol
EMFUR	3-Ethyl-4-methylfurane
EMPA	Ethyl methylphosphonic acid / Ethyl methylphosphonate
EMS	Ethyl methanesulfonate
ENDRN	Endrin
ENDRNA	Endrin aldehyde
ENDRNK	Endrin ketone
ENHETH	Ethyl-N-hexyl ether
EPHEN	Ethyl phenol / Ethylhydroxy benzene
EPTOX	Extraction procedure toxic organics
ESFSO4	Endosulfan sulfate
ET3MBZ	1-Ethyl-3-methylbenzene
ET4MBZ	1-Ethyl-4-methylbenzene
ETBD10	Ethylbenzene-D10
ETC6H5	Ethylbenzene
ETCYHX	Ethylcyclohexane
ETHBR	Bromoethane / Ethyl bromide
ETHER	Ether - nonspecific

ACCEPTABLE ENTRIES: (Cont.)

ETHION	Ethion
ETHOPR	Ethoprop
ETHPO4	Ethyl phosphate / Phosphoric acid, triethyl ester
ETMACR	Ethyl methacrylate
ETMEBZ	Ethylmethyl benzene
ETOH	Ethanol
EU	Europium
F	Fluoride
F10BP	Decafluorobiphenyl
FABPEE	Formic acid, beta-phenylethyl ester
FACHXE	Formic acid, cyclohexyl ester
FAMPHR	Famphur
FANT	Fluoranthene
FARN	Farnesol
FATAL	Fatty alcohols
FC2A	Fluoroacetic acid
FE	Iron
FLRENE	Fluorene
FNT	Fenthion
FORM	Formaldehyde / Methyl aldehyde
FREON	Freon / Dichlorofluoromethane
FRN112	Freon 112 / Tetrachlorodifluoroethane
FST	Fensulfothion
FURANS	Dibenzofurans - nonspecific
GA	Tabun / Ethyl-N,N-dimethyl phosphoramidocyanidate
GALM	Gallium
GAMAG	Gamma gross
GAMMAS	Gamma scan / Gamma screen
GB	Sarin / Isopropyl methylphosphonofluoridate
GBHC	gamma-Hexachlorocyclohexane (obsolete - use LIN)
GCHLOR	gamma-Chlordane (obsolete-use GCLDAN)
GCLDAN	gamma-Chlordane
GD	Soman / Pinacolyl methylphosphonofluoridate
GE	Germanium
GRNDY	Green dye
GUNIT	Guanidine nitrate
H	Levinstein mustard
H2O	Water
H2S	Hydrogen sulfide
H3PO4	Phosphoric acid
HARD	Total hardness

ACCEPTABLE ENTRIES. (Cont.)

HCBD	Hexachlorobutadiene
HCNB	Hexachloronorbornadiene
HCO3	Bicarbonate
HD	Distilled mustard / Bis (2-chloroethyl) sulfide
HEDODA	N,N-Bis(2'hydroxyethyl)dodecanamide
HEXAC	Hexanoic acid / Caproic acid
HEXANE	Hexane
HG	Mercury
HGEXT	Mercury extractable
HGTOT	Mercury total
HMTCHE	2,6,10,15,19,23-Hexamethyl-2,6,10,14,18,22-tetracosahexaene
HMX	Cyclotetramethylenetetranitramine
HN	Nitrogen mustard
HO	Holmium
HPCL	Heptachlor
HPCLE	Heptachlor epoxide
HPLH2O	HPLC-grade water
HPO4	Hydrolyzable phosphate
HTH	Hypochlorite
HWX1013	Halowax 1013
HWX1099	Halowax 1099
HXAB2E	Hexanedioic acid, bis (2-ethylhexyl) ester
HXADBE	Hexanedioic acid, dibutyl ester / Dibutyl adipate
HXADME	Hexanedioic acid, dimethyl ester / Dimethyl adipate
HXADOE	Hexanedioic acid, dioctyl ester (obsolete - use DOAD)
HXCOS	Hexacosane
HXHMAZ	4,5,6,7,8,8A-Hexahydro-8A-methyl-2-(1H)-azulenone
HXMETA	1,3,5,7-Tetraazatricyclo[3.3.1.3.7]decane / Hexamethylene tetramine
HXMTSX	Hexamethylcyclotrisiloxane
HYDRND	1H-Indene, octahydro- / Hydrindane
HYDRZ	Hydrazine
HYNB	7-Hydroxynorbornadiene
ICDPYR	Indeno[1,2,3-C,D]pyrene
IGNIT	Ignitability
IMPA	Isopropyl methylphosphonic acid / Isopropyl methylphosphonate
INDAN	1-Hydroxy-2,3-methylene indan (M.W.146)
INDENE	Indene
INDOLE	Indole / 2,3-Benzopyrrole
IPA	Isopropylamine
ISODR	Isodrin
ISOPBZ	Isopropylbenzene / Cumene

ACCEPTABLE ENTRIES: (Cont.)

ISOPHR	Isophorone
ISOQUIN	Isoquinoline
K	Potassium
K40	Potassium 40
KB	2-Diisopropylaminoethanol
KEND	Ketoendrin
L	Lewisite
LA	Lanthanum
LA140	Lanthanum 140
LACYBB	Lactic acid, cyclic butaneboronate
LAURIC	Lauric acid
LI	Lithium
LIN	Lindane / gamma-Benzenehexachloride / gamma-Hexachlorocyclohexane
LIPID	Lipids, percentage
LO	Lewisite oxide
LT	Bis (2-diisopropylaminoethyl) methylphosphonite
LT-A	Bis (2-diisopropylaminoethyl) methylphosphonate
MALO	Malononitrile
MBADOE	3-Methylbutanoic acid, 3,7-dimethyl-2,4,6-octatrienyl ester
MBAS	Foaming agents / Methylene blue active substance
MBOH	alpha-Methylbenzyl alcohol
MBZA	alpha-Methylbenzyl acetoacetate
MBZCAC	5-Methylbenzo(C)acridine
MBZCL	alpha-Methylbenzyl-2-chloroacetoacetate
MCPA	4-Chloro-o-tolyloxyacetic acid / MCPA
MCPP	2-(4-Chloro-2-methylphenoxy)propionic acid / MCPP
MDCL	2-Methylundecanal / 2-Methylhendecanal
ME2AEA	Dimethyl arsenic acid
ME2C11	Dimethylundecanes
ME2HG	Dimethyl mercury
ME2HPL	Methyl-2-heptanol
ME2HPO	Methyl-2-heptanone
ME2NAP	Dimethylnaphthalenes
ME3C10	Trimethyldecanes
ME3C11	Trimethylundecanes
ME3C6	Trimethyl hexanes
ME3NAP	Trimethylnaphthalenes
MEAOA	Methyl arsonic acid
MEBPIP	1,1'-Methylenebis(piperidine)
MEC6D8	Toluene-D8
MEC6H5	Toluene

ACCEPTABLE ENTRIES: (Cont.)

MECC6	Methylcyclohexane
MECYBU	Methylcyclobutane
MECYDC	Methylcyclodecane
MECYPE	Methylcyclopentane
MEHG	Methyl mercury
MEHGCL	Methyl mercury chloride
MEK	Methylethyl ketone / 2-Butanone
MELAM	Melamine / 1,3,5-Triazine-2,4,6-triamine
MEOH	Methanol
MEPHEN	Methylethyl phenol / Methylethylhydroxy benzene
MEPOH	2-Methylpentanol
MERP	Merphos
MES	Methyl sulfide / Thiobismethane
MESTOX	Mesityl oxide / 4-Methyl-3-penten-2-one
METNAP	Methylnaphthalenes
MEVIN	Mevinphos
MEXCLR	Methoxychlor
MG	Magnesium
MHYDRZ	Methylhydrazine
MIBCOH	Methyl isobutyl carbinol (4-methyl-2-pentanol)
MIBK	Methylisobutyl ketone
MIPK	Methylisopropyl ketone
MIREX	Mirex
MLTHN	Malathion
MMS	Methyl methanesulfonate
MN	Manganese
MN54	Manganese 54
MNBK	Methyl-N-butyl ketone / 2-Hexanone
MO	Molybdenum
MP	Methylphenols
MPA	Methylphosphonic acid
MPDDD	2-(m-Chlorophenyl)-2-(p-chlorophenyl)-1,1-dichloroethane
MPK	Methylpropyl ketone / 2-Pentanone
MPRTHN	Parathion methyl
MQFH2O	Milli-Q-filtered water
MSSCAN	GC-MS organic scan
MTRITH	Methyl trithion
MTRZL	Metrazol / Cardiazole
N2KJEL	Nitrogen by Kjeldahl Method
NA	Sodium
NA22	Sodium 22

ACCEPTABLE ENTRIES: (Cont.)

NACLO	Sodium hypochlorite
NALED	Naled
NAOHME	50% 1M NaOH - 50% Methanol
NAP	Naphthalene
NAPD8	Naphthalene-D8
NB	Nitrobenzene
NBD5	Nitrobenzene-D5
NBMBSA	N-Butyl-4-methylbenzenesulfonamide
NBUETH	1,1'-Oxybis[butane] / n-Butyl ether
NC	Nitrocellulose
NC1	Nitrocellulose 12%N
NC2	Nitrocellulose 13.4%N
NCLN	[illegible]
NCPPPA	N-(4-Chlorophenyl)-3-phenyl-2-propenamide
ND	Neodymium
NDHXA	N-Nitrosodihexylamine
NDIOX	Nitrogen dioxide
NDMBSA	N,4-Dimethylbenzenesulfonamide
NDNPA	Nitrosodi-N-propylamine
NE2PEA	N-Ethyl-2-propenamide
NECHXA	N-Ethylcyclohexylamine
NG	Nitroglycerine
NH3	Ammonia
NH3N2	Ammonia nitrogen
NH4	Ammonium
NH4NIT	Ammonium nitrate
NH4PIC	Ammonium picrate / 2,4,6-Trinitrophenol ammonium salt
NHEDCA	N-(2-Hydroxyethyl)-decanamide
NI	Nickel
NI63	Nickel 63
NIOB	Niobium
NIT	Nitrite, nitrate - nonspecific
NITARO	Nitroaromatics
NMANIL	N-Methylaniline
NMCARB	N-Methylcarbamic acid, 1-naphthyl ester
NMNBOA	N-Methyl-N-nitrosoaniline
NN4HPL	N-Nitroso-4-hydroxyproline
NNADME	Nonanedioic acid, dimethyl ester
NNDMA	N,N-Dimethylaniline
NNDMEA	N-Nitrosodimethylamine
NNDNB	N-Nitroso-di-N-butylamine

ACCEPTABLE ENTRIES: (Cont.)

NNDNPA	N-Nitrosodi-N-propylamine
NNDPA	N-Nitrosodiphenylamine
NNPIP	N-Nitrosopiperidine
NNPIPA	N-Nitrosopentylisopropylamine
NO2	Nitrite
NO3	Nitrate
NONPHE	Nonyl phenol (any isomer)
NPOX	Nonpurgeable organic halides
NPQ	Naphthoquinone
NQ	Nitroquanidine
NTMBSA	N,N,4-Trimethylbenzenesulfonamide
O2	Oxygen
OCADMF	Octanedioic acid, dimethyl ester
ODAPDM	Octadecanoic acid, (2-phenyl-1,3-dioxolan-4-yl) methyl ester
ODECA	Octadecanoic acid / Stearic acid
ODMNSX	Octadecamethylcyclononasiloxane
ODOR	Odor
OEMP	O-Ethyl methylphosphonate
OILGR	Oil & grease
OMCTSX	Octamethylcyclotetrasiloxane
OPDDD	2-(o-Chlorophenyl)-2-(p-chlorophenyl)-1,1-dichloroethane
OPDDE	2-(o-Chlorophenyl)-2-(p-chlorophenyl)-1,1-dichloroethene
OPDDT	2-(o-Chlorophenyl)-2-(p-chlorophenyl)1,1,1-trichloroethane
OPO4	Organophosphates
OXAL	Oxalic Acid
OXAT	1,4-Oxathiane
OXCN	Oxacyclononane
OZONE	Ozone
P4	Phosphorus
PA234	Protactinium 234
PA2HDE	Propanoic acid, 2-hydroxydecyl ester
PA2MBE	Pentanoic acid, 2-methylbutyl ester
PAD4NE	Phosphoric acid, diethyl-4-nitrophenyl ester
PAH	Polynuclear aromatic hydrocarbons
PAODPE	Phosphoric acid, octyldiphenyl ester
PARTIC	Particulate matter
PATBUE	Propanoic acid, t-butyl ester
PATPE	Phosphoric acid, triphenyl ester
PB	Lead
PB211	Lead 211
PB212	Lead 212

ACCEPTABLE ENTRIES: (Cont.)

PB214	Lead 214
PBSTY	Lead styphnate
PCB016	PCB 1016
PCB221	PCB 1221
PCB232	PCB 1232
PCB242	PCB 1242
PCB248	PCB 1248
PCB254	PCB 1254
PCB260	PCB 1260
PCB262	PCB 1262
PCH	Pentachlorohexane
PCLORM	Dimethyl-2,3,5,6-trichloropicolinic acid / PICLORAM
PCNB	Pentachloronitrobenzene
PCP	Pentachlorophenol
PCYMEN	4-(1-Methylethyl) toluene / p-Cymene
PD	Dichlorophenyl amine
PDMAB	p-Dimethylaminoazobenzene
PDMSLX	Polydimethyl siloxane / Dimethylpoly siloxane
PEGE	Polyethyleneglycol ethers
PENAMD	N-Pentamide
PENTAN	Pentane
PERTHN	Perthane
PETDIL	Petroleum distillates
PETN	Pentaerythritol tetranitrate
PFP	Pentafluorophenol
PH	pH
PH-F	pH as tested in the field
PHAD10	Phenanthrene-D10
PHANTR	Phenanthrene
PHENA	Phenacetin
PHENAA	Phenylacetic acid
PHENDS	Phenol-D5
PHEND6	Phenol-D6
PHENLC	Phenolics - nonspecific
PHENOL	Phenol
PHOR	Phorate
PHTHA	1,2-Benzenedicarboxylic acid / Phthalic acid
PHTHL	Phthalates
PHXAA	Phenoxyacetic acid
PHYCP	1,2,3,4,5-Pentahydroxycyclopentane
PHYETH	1,1'-(1,3-Phenylene)ethanone

ACCEPTABLE ENTRIES: (Cont.)

PIPER	Piperidine
PMPA	Propyl methylphosphonic acid
PO4	Phosphate
PO4ORT	Orthophosphate
POX	Purgeable organic halogen
PPDDD	2,2-Bis (p-chlorophenyl)-1,1-dichloroethane
PPDDE	2,2-Bis (p-chlorophenyl)-1,1-dichloroethene
PPDDT	2,2-Bis (p-chlorophenyl)-1,1,1-trichloroethane
PPTDE	2,2-Bis (p-chlorophenyl)-2-phenyl-1,1- dichloroethane
PRC6H5	Propylbenzene
PROMET	Prometon / Primatol / 2,4-Bis(isopropylamino)-6-methoxy-1,3,5-triazine
PRONA	Pronamide
PROPOX	Propylene oxide / Methyl oxirane
PRTHN	Parathion
PU238	Plutonium 238 isotope
PU239	Plutonium 239 isotope
PYLD12	Perylene-D12
PYR	Pyrene
PYRD10	Pyrene-D10
PYRDIN	Pyridine
QA	2-Diisopropylaminoethyl methylphosphinate
QB	2-Diisopropylaminoethyl ethyl methylphosphinite
QUINO	Quinoline / Benzo[B]pyridine
RA	Radium
RA223	Radium 223
RA226	Radium 226
RA228	Radium 228
RDX	Cyclonite / Hexahydro-1,3,5-trinitro-1,3,4-triazine
REACTY	Reactivity
REDDY	Red dye
RESACI	Resin acids
RESO	Resorcinol / 1,3-Benzenediol
RON	Ronnel
RU103	Ruthenium 103
RU106	Ruthenium 106
S	Sulfur
S2CL2	Sulfur monochloride
SALINE	Saline
SALINI	Salinity
SB	Antimony
SC	Scandium

ACCEPTABLE ENTRIES: (Cont.)

SCN	Thiocyanate
SE	Selenium
SPOTEP	Sulfotepp / Thiodiphosphoric acid, tetraethyl ester
SI	Silica
SIL	Silicate
SILVEX	Silvex
SN	Tin
SO2	Sulfur Dioxide
SO3	Sulfite
SO4	Sulfate
SPIRO	(1'S trans)-7-Chloro-4-hydroxy-2',4- dimethoxy-6'-methyl spiro [benzofuran-2-(3H)-1'-(2)-cyclohexene]-3, 4'-dione
SQUAL	Squalene
SR	Strontium
SR90	Strontium 90
SSOL	Settleable solids
STB	Super tropical bleach
STERO	Steroids
STIGMA	Stigmasterol
STIR	Stirophos / Tetrachlorvinphos
STYPH	Styphnate ion
STYPHA	Styphnic acid (obsolete - use 246TNR)
STYR	Styrene
SUADME	Sulfuric acid, dimethyl ester
SULFID	Sulfide
SUPONA	Supona / 2-Chloro-1-(2,4-dichlorophenyl) vinyldiethyl phosphate
T12DCE	trans-1,2-Dichloroethene / trans-1,2-Dichloroethylene
T13DCP	trans-1,3-Dichloropropene
T1B2BC	trans-1-Bromo-2-butylcyclopropane
T2DEC	trans-2-Decene
TA	Tantalum
TASTE	Taste
TBA	Tributylamine
TBASDE	Thiobutyric acid, S-decyl ester
TBCARB	2,2-Dimethyl-1-propanol / tert-Butylcarbinol Neopentyl alcohol
TBP	Tributyl phosphate
TCB	Tetrachlorobenzenes
TCB1	1,2,4,5-Tetrachlorobenzene
TCB2	1,2,3,4-Tetrachlorobenzene
TCB3	1,2,3,5-Tetrachlorobenzene
TCDD	2,3,7,8-Tetrachlorodibenzo-p-dioxin / Dioxin

ACCEPTABLE ENTRIES (Cont.)

TCDF	2,3,7,8-Tetrachlorodibenzofuran
TCHDCS	trans-1,2-Cyclohexanediol cyclic sulfite
TCLDAN	trans-Chlordane
TCLEA	1,1,2,2-Tetrachloroethane
TCLEE	Tetrachloroethylene / Tetrachloroethene
TCLTFE	1,1,2-Trichloro-1,2,2-trifluoroethane
TCN	Trichloronate
TCOS	Tetracosane
TCP	Trichloropropane
TCSAME	15-Tetracosenoic acid, methyl ester
TCST	Trichlorostyrenes
TCYN	Total cyanide
TDCBU	trans-1,4-Dichloro-2-butene
TDGCL	Thiodiglycol
TDGCLA	Thiodiglycolic acid
TDMHSX	Tetradecamethyl hexasiloxane
TDODTL	tert-Dodecanethiol
TDS	Total dissolved solids
TE	Tellurium
TEGLME	Triethylene glycol, methyl ether
TEGLYC	2,2'-[1,2-Ethanediylbis(oxy)] bis[ethanol] / Triethylene glycol
TEMP	Temperature
TEMP-F	Temperature as tested in the field
TEPO4	Triethyl phosphate
TETPT	Tetrachlorocyclopentene
TETR	Tetracene
TETRYL	Nitramine / N-Methyl-N,2,4,6-tetranitroaniline / Tetryl
TFAAPE	Trifluoroacetic acid, 1,5-pentanediyl ester
TFDCLE	1,1,2-Trifluoro-1,2-dichloroethane
TGLYME	Tetraglyme
TH	Thorium
TH227	Thorium 227
TH230	Thorium 230
TH232	Thorium 232
TH234	Thorium 234
THCDD	Total hexachlorodibenzo-p-dioxins
THCDF	Total hexachlorodibenzofurans
THF	Tetrahydrofuran
THNAP	1,2,3,4-Tetrahydronaphthalene / Tetralin
THP2ML	Tetrahydropyranyl-2-methanol
THPCDD	Total heptachlorodibenzo-p-dioxins

ACCEPTABLE ENTRIES (Cont.)

THPCDF	Total heptachlorodibenzofurans
TI	Titanium
TL	Thallium
TL208	Thallium 208
TM3PL	2,3,4-Trimethyl-3-pentanol
TMBPET	2-(2-(4-(1,1,3,3-Tetramethylbutyl)phenoxy)ethoxy)ethanol
TMHPDO	3,3,6-Trimethyl-1,5-heptadien-4-one
TMHXL	3,5,5-Trimethyl-1-hexanol
TMNT	Total mononitrotoluenes
TMODEO	2,2,7,7-Tetramethyl-4,5-octadien-3-one
TMP	Trimethyl phosphate
TMPHAN	Tetramethylphenanthrene
TMPO	Trimethylphosphonate
TMPO3	Trimethyl phosphite
TMPO4	Trimethyl phosphate (obsolete - use TMP)
TMTCON	3,5,24-Trimethyltetracontane
TMUR	Tetramethylurea
TNBISO	Trinitrobenzene isomer
TNTISO	Trinitrotoluene isomer
TOC	Total organic carbon
TOCDD	Total octachlorodibenzo-p-dioxins
TOCDF	Total octachlorodibenzofurans
TOKU	Tokuthion / Prothiophos
TOTCOL	Total coliform
TOTDDT	Total value of all DDT, DDE, DDD isomers
TOTGAF	Total gravimetric, acid fraction
TOTHG2	Total mercury
TOTPCB	Total PCBs
TOX	Total organic halogens
TPCDD	Total pentachlorodibenzo-p-dioxins
TPCDF	Total pentachlorodibenzofurans
TPH	Thiophene
TPHC	Total petroleum hydrocarbons
TPO4	Total phosphates
TRCLE	Trichloroethylene / Trichloroethene
TREACT	Tremolite-actinolite asbestos
TRIBZ	Trichlorobenzenes
TRIMBZ	Trimethylbenzenes
TRIPT	Trichlorocyclopentene
TRITIU	Tritium
TRITN	Trithion

ACCEPTABLE ENTRIES: (Cont.)

TRMTDE	2,3,4-Trimethyl-4-tetradecene
TRO	Diethyl methylphosphonate
TRPD14	Terphenyl-D14
TRPHEN	Triphenylene
TRXMET	Trihalomethanes
TS	Total sulfur
TSAHPE	p-Toluenesulfonic acid, heptyl ester
TSOLID	Total solids
TSS	Total suspended solids
TTCDD	Total tetrachlorodibenzo-p-dioxins
TTCDF	Total tetrachlorodibenzofurans
TTCP	Tetrachlorophenol
TU	Total uranium
TURBID	Turbidity
TVS	Total volatile solids
TXPHEN	Toxaphene
TXYLEN	Xylenes, total combined
U	Uranium
U234	Uranium 234
U235	Uranium 235
U238	Uranium 238
UDMH	Unsymmetrical dimethyl hydrazine
UNKXXX	Unknown compound, XXX = 001 thru 999.
UREA	Urea / Carbamide / Carbonyl diamide
V	Vanadium
VARHY	Various hydrocarbons with increasing M.W.
VFA	Vinyl formate
VM	O-Ethyl-S-(2-diethylaminoethyl) methylphosphonothiolate
VX	O-Ethyl-S-(2-diisopropylaminoethyl) methylphosphonothiolate
W	Tungsten
WP	White phosphorus
XPLOSV	Explosive spray
XYLEN	Xylenes
Y	Yttrium
YB	Ytterbium
YELDY	Yellow dye
YL	Ethyl methylphosphonate
ZN	Zinc
ZR95	Zirconium 95
ZR	Zirconium

ACCEPTABLE ENTRIES: (Cont.)

Chemical and Radiological Data:

(Sorted alphabetically by Test Name)

(1-Methylpropyl) benzene	1MPRB
(1',5 trans)-7-Chloro-6-hydroxy-2', 4-dimethoxy-6'-methyl spiro(benzofuran-2-(3H)-1'-(2)-cyclohexene)-3, 4'-dione	SPIRO
(1,1-Dimethylethyl) benzene	11DMEB
(1,3-Dimethylbutyl) benzene	13DMBB
(2-Chloroethoxy) ethene	2CLEVE
(3beta)-Stigmast-5-en-3-ol	3SSE3L
0.1N Hydrochloric acid	01NHCL
1-(2-Butoxyethoxy) ethanol	BEETO
1-Acetyl-3-methyl-5-pyrazolone	1A3MPZ
1-Acetyl-4-(1-hydroxy-1-methylethyl) benzene	1A4HMB
1-Benzyl-4-hydroxybenzimidazole	1BY4HB
1-Butanol	1C4L
1-Carbamoyl-3,5-dimethyl-2-pyrazoline	1CDMPZ
1-Chloro-2,4-hexadiene	1CL24H
1-Chlorohexane	1CH
1-Chloronaphthalene	1CNAP
1-Chlorooctadecane	1CLODC
1-Dodecanol	1DODCL
1-Eicosanol	EICOSL
1-Ethyl-2-methylbenzene	1E2ME
1-Ethyl-2,4-dimethylbenzene	1E24DE
1-Ethyl-3-methylbenzene	ET3MBZ
1-Ethyl-4-methylbenzene	ET4MBZ
1-Ethylhexylbenzene	1EHE
1-Ethylpropylbenzene	1EPI
1-Fluoronaphthalene	1FNAI
1-Heptadecanol	1HPDOI
1-Hexen-3-ol	1HX3OI
1-Hexene	1HX
1-Hydroxy-2,3-methylene indan (M.W.146)	IHDAI
1-Methoxy-1-propyne	1MX1P
1-Methyl-2-(2-propenyl) cyclopentane	1M2PE
1-Methyl-7-(1-methylethyl) naphthalene	1M7MEI
1-Methyl-9H-fluorene	1MFLR
1-Methylbenz (A) anthracene	1MBAA
1-Methylcyclopentene	1MCPN

ACCEPTABLE ENTRIES: (Cont.)

1-Methyldecylbenzene	1MDB
1-Methylethylcyclopropane	1MECPR
1-Methylethylcyclohexane	1MECHX
1-Methylindan	1MEIND
1-Methylnaphthalene	1MNAP
1-Methylnonylbenzene	1MNB
1-Methylpyrene	1MPYR
1-Naphthylamine	1NAPA
1-Nitro-2-octanone	1N2ONE
1-Nitroheptane	1NHP
1-Nitropropane	1NPN
1-Octanol	1OCTOL
1-Phenylnaphthalene	1PNAP
1-Propanol	1C3L
1-Propenylcyclohexane	1PECHX
1-t-Butylcyclohexanecarboxylic acid	1TBCHA
1.0N Potassium chloride solution	1NKCL
1.alpha.(E),4.alpha.-1-(1,4-Dihydroxy-2,6,6-trimethyl 2-cyclohexen-1-yl)-2-buten-1-one	DTCHBO
1,1-(1,2-Ethynediyl) bis[benzene]	DPETYN
1,1-Di-n-butylethene	DNBEE
1,1-Di-n-butylethylene	DNBEE
1,1-Dichloro-1-propene	11C1PE
1,1-Dichloroethane	11DCLE
1,1-Dichloroethene	11DCE
1,1-Dichloroethylene	11DCE
1,1-Dimethylcyclopentane	11MCPE
1,1-Diphenylhydrazine	11DPH
1,1-Oxybis(2-ethoxy)ethane	EGMEE
1,1-Thiobis[benzene]	DPSULF
1,1'-(1,3-Phenylene)ethanone	PHYETH
1,1'-(1,3-Propanediyl) bis[benzene]	13DPPR
1,1'-Methylenebis[piperidine]	MEBPIP
1,1'-Oxybis[butane]	NBUETH
1,1,1-Trichloroethane	111TCE
1,1,1,2-Tetrachloroethane	2TCLEA
1,1,2-Trichloro-1,2,2-trifluoroethane	TCLTFE
1,1,2-Trichloroethane	112TCE
1,1,2-Trifluoro-1,2-dichloroethane	TFDCLE
1,1,2,2-Tetrachloroethane	TCLEA
1,1,2,2-Tetramethylcyclopropane	12TMCP

ACCEPTABLE ENTRIES: (Cont.)

1,1,3-Trimethylcyclohexane	113MCH
1,2-Benzenedicarboxylic acid	PHTHA
1,2-Cyclohexane oxide	CHO
1,2-Dibromoethane	12DBRE
1,2-Dichlorobenzene	12DCLB
1,2-Dichlorobenzene-D4	12DBD4
1,2-Dichloroethane	12DCLE
1,2-Dichloroethane-D4	12DCD4
1,2-Dichloroethenes	12DCE
1,2-Dichloroethylenes (cis and trans isomers)	12DCE
1,2-Dichloropropane	12DCLP
1,2-Dimethylbenzene	12DMB
1,2-Dimethylcyclopentadiene	DMCPDE
1,2-Dimethylcyclopentane	12MCPE
1,2-Dimethylnaphthalene	12DNAP
1,2-Diphenylbenzene	12DPB
1,2-Diphenylhydrazine	12DPH
1,2-Epoxycyclohexane	12EPCH
1,2-Epoxyethylbenzene	12EPEB
1,2,3-Benzotriazole	BZOTRZ
1,2,3-Trichlorobenzene	123TCB
1,2,3-Trichloropropane	123CPR
1,2,3-Trimethylbenzene	123TMB
1,2,3-Trimethylcyclohexane	123MCH
1,2,3,4-Tetrachlorobenzene	TCB2
1,2,3,4-Tetrahydronaphthalene	THNAP
1,2,3,4-Tetramethylbenzene	1234MB
1,2,3,4,4A,5,8,8A-Octahydro-1,4,5,8-dimethanol-naphthalen-2-ol	18O18D
1,2,3,4,5-Pentahydroxycyclopentane	PHYCP
1,2,3,5-Tetrachlorobenzene	TCB3
1,2,4-Trichlorobenzene	124TCB
1,2,4-Trimethylbenzene	124TMB
1,2,4-Trimethylcyclohexane	124MCH
1,2,4,5-Tetrachlorobenzene	TCB1
1,3-Benzenediol	RESO
1,3-Cyclopentadione	13CPDO
1,3-Dichlorobenzene	13DCLB
1,3-Dichlorobenzene-D4	13DBD4
1,3-Dichloropropane	13DCP
1,3-Dichloropropene	13DCPE
1,3-Diethylbenzene	13DEB

ACCEPTABLE ENTRIES: (Cont.)

1,3-Difluorobenzene	13DFB
1,3-Dihydro-2H-indol-2-one	13HIND
1,3-Dimethylbenzene	13DMB
1,3-Dimethylcyclohexane	13DMCH
1,3-Dimethylcyclopentane	13MCPE
1,3-Dimethylnaphthalene	13DNAP
1,3-Dinitrobenzene	13DNB
1,3-Diphenylpropane	13DPPR
1,3,5-Triazine-2,4,6-triamine	MELAM
1,3,5-Trimethylbenzene	135TMB
1,3,5-Trimethylcyclohexane	135MCH
1,3,5-Trinitrobenzene	135TNB
1,3,5,7-Tetraazatricyclo[3.3.1.13,7]decane	HXMETA
1,4-Diacetylbenzene	14DACB
1,4-Dichlorobenzene	14DCLB
1,4-Dichlorobenzene-D4	14DBD4
1,4-Dichlorobutane	14DCBU
1,4-Difluorobenzene	14DFB
1,4-Dihydro-1,4-methanonaphthalene	14DMNP
1,4-Dimethoxyanthracene	14DMXA
1,4-Dimethyl-2-ethylbenzene	14D2EB
1,4-Dimethylbenzene	14DMB
1,4-Dimethylcyclohexane	14DMCH
1,4-Dinitrobenzene	14DNB
1,4-Dioxane	14DIOX
1,4-Hexadiene	14HXDE
1,4-Oxathiane	OXAT
1,5-Bis (1,1-dimethylethyl)-3,3-dimethylbicyclo [3.1.0] hexane-2-one	BIDBI
1,5-Dimethylnaphthalene	15DNAP
1,6-Dimethylindan	16DMIN
1,6-Dimethylnaphthalene	16DNAP
1,6,7-Trimethylnaphthalene	167TMN
1,8-Dimethylnaphthalene	18DNAP
1H-Benzotriazole	BZOTRZ
1H-Indene, octahydro-	HYDRND
2-(1-Methylethyl) naphthalene	2MENAP
2-(2,4-Dichlorophenoxy)propionic acid	DICP
2-(2,4,5-Trichlorophenoxy) propionic acid	245TP
2-(2-(4-(1,1,3,3-Tetramethyl)butyl)phenoxy)ethanol	TMBPLT
2-(2-Cyanoethyl) cyclohexanone	2CECHO
2-(2-Methoxyethoxy) ethanol	2MXEXL

ACCEPTABLE ENTRIES: (Cont.)

2-(2-N-Butoxyethoxy) ethanol	2BEETO
2-(2-Phenoxyethoxy) ethanol	2PXEXL
2-(4-Chloro-2-methylphenoxy)propionic acid	MCPP
2-(Cyanoethyl) cyclohexanone	2CMCHO
2-(m-Chlorophenyl)-2-(p-chlorophenyl)-1,1-dichloroethane	MPDDD
2-(o-Chlorophenyl)-2-(p-chlorophenyl)-1,1-dichloroethane	OPDDD
2-(o-Chlorophenyl)-2-(p-chlorophenyl)-1,1- dichloroethene	OPDDE
2-(o-Chlorophenyl)-2-(p-chlorophenyl)-1,1,1-trichloroethane	OPDDT
2-(t-butyl)-4-methylfuran	2B4MFU
2-Amino-4-nitrotoluene	2A4NT
2-Amino-4,6-dinitroaniline	2A46DA
2-Amino-4,6-dinitrotoluene	2A46DT
2-Bromo-1-chloropropane	2B1CP
2-Bromobenzoic acid	2BRBZA
2-Butanone	MEK
2-Butene	2C4E
2-Butoxyethanol	2BUXEL
2-Butoxyethanol phosphate	BEP
2-Butyl-1-octanol	2B1OOL
2-Butyl-N-methylnortricurine, methyl ester	2BNMNM
2-Butyltetrahydrofuran	2BUTHF
2-Chloro-1-(2,4-dichlorophenyl) vinyldiethyl phosphate	SUPONA
2-Chloro-6-methoxy-10H-phenothiazine	2CMPZ
2-Chlorobiphenyl	2CLBP
2-Chloroethylvinyl ether	2CLEVE
2-Chloronaphthalene	2CNAP
2-Chlorophenol	2CLP
2-Chlorophenol-D4	2CLPD4
2-Chlorotoluene	2CLT
2-Chlorovinyl arsonic acid	CLVRA
2-Cresol	2MP
2-Cyclohexen-1-ol	2CHE1L
2-Cyclohexen-1-one	2CHE1O
2-Cyclohexyl-4,6-dinitrophenol	2CH46D
2-Cyclopentene-1-hendecanoic acid, ethyl ester	2CHAEE
2-Diisopropylaminoethanol	KB
2-Diisopropylaminoethyl ethyl methylphosphonate	QB
2-Diisopropylaminoethyl methylphosphonate	QA
2-Ethyl-1-hexanol	2E1HXL
2-Ethyl-2-hydroxymethyl-1, 3-propanediol	2EHPD
2-Ethyl-4-methyl-1-pentanol	2E4MPL

ACCEPTABLE ENTRIES: (Cont.)

2 Ethylcyclohexanol	2ECYHL
2 Ethylhexanoic acid	2EHAA
2 Ethylphenol	2EP
2-Fluorobiphenyl	2FBP
2-Fluoronaphthalene	2FNAP
2-Fluorophenol	2FP
2-Hendecanol	2HNDOL
2-Heptanone	2C7O
2-Hexanone	MNBK
2-Hydroxybenzaldehyde	2HBNZL
2-Hydroxybiphenyl	2HYBP
2-Hydroxybutanedioic acid, dimethyl ester	2HBDDM
2-Isobutyric acid	2MPA1E
2-Methoxy-1-propene	2MX1PE
2-Methoxy-2-methylpropane	2MX2MC3
2-Methoxy-2,3,3-trimethylbutane	2MXTMB
2-Methoxy-3,6-dichlorobenzoic acid	DCAMBA
2-Methyl-1-dodecanol	2M1DDL
2-Methyl-1-pentene	2M1PNE
2-Methyl-2-butenediamide	2M2BDA
2-Methyl-2-hydroxy-3-butyne	2M2H3B
2-Methyl-2-propanol	2M2C3L
2 Methyl-2-propenoic acid, 1,2-ethanediyl ester	2MPEAE
2-Methyl-2,4-pentanediol	2M24P
2-Methyl-3-hexene	2M3HXE
2-Methyl-3-pentanone	2M3PNO
2-Methyl-4-(t-butyl) phenol	4TBU2C
2-Methyl-4-chlorophenol	4CL2C
2-Methyl-4,6-dinitrophenol	46DN2C
2-Methyl-5-(1-methylethyl)-2-cyclohexen-1-one	2MMECO
2-Methyl-5-chlorophenol	5CL2C
2-Methyl-6-(t-butyl) phenol	6TBU2C
2-Methylbenzyl alcohol	2MBZA
2-Methylbutane	2MC4
2-Methylcyclopentanone	2MCPNE
2-Methylcyclopentanol	2MCYPL
2-Methyldecane	2MDEC
2-Methyldodecane	2MDOD
2-Methylhendecanal	MDCL
2-Methylheptane	2MC7
2-Methylhexane	2MC6

ACCEPTABLE ENTRIES: (Cont.)

2-Methylnaphthalene	2MNAP
2-Methyloctadecanoic acid	2MHODI
2-Methylpentane	2MLPEN
2-Methylpropanol	MEPOH
2-Methylphenol	2MP
2-Methylpropane	2MC3
2-Methylpropanoic acid, 3-hydroxy-2,4,4-trimethyl-1,3-propanediyl ester	2MPAHT
2-Methylpropanoic acid, methyl ester	2MPAME
2-Methylpyrene	2MPYR
2-Methyltetradecane	2MTETD
2-Methyltetrahydrofuran	2MTHF
2-Methylthio-4-hydroxypyrimidine	2MTHPM
2-Methylundecanal	MDCL
2-Naphthylamine	2NAPA
2-Nitro-m-cresol	2N3C
2-Nitro-N-nitrosodiphenylamine	2NNDPA
2-Nitroaniline	2NANIL
2-Nitrobenzamine	2NBZLZ
2-Nitrophenol	2NP
2-Nitropropane	2NPN
2-Nitrotoluene	2NT
2-Nonadecanone	2NODCO
2-Pentanone	MPK
2-Phenoxyethanol	2PHXEL
2-Phenylethanol	2PETOH
2-Phenylnaphthalene	2PNAP
2-Picoline	2PICO
2-Propanol	2PROL
2-sec-Butyl-4,6-dinitrophenol	2SB46D
2-Undecanol	2UNDOL
2.0N Potassium chloride solution	2NKCL
2,2-Bis(chlorophenyl)dichloroethylene (DDT related)	BCPHCE
2,2-Bis(ethylmercapto) diethyl ether	2BEMDE
2,2-Bis(methylmercapto) propane	2BMMPR
2,2-Bis(p-chlorophenyl)-1,1-dichloroethane	PPDDD
2,2-Bis(p-chlorophenyl)-1,1-dichloroethene	PPDDE
2,2-Bis(p-chlorophenyl)-1,1,1-trichloroethane	PPDDT
2,2-Bis(p-chlorophenyl)-2-phenyl-1,1-dichloroethene	PTDE
2,2-Dichloropropionic acid	DALA
2,2-Dimethyl-1-acetylcyclohexane	DM1ACH
2,2-Dimethyl-1-propanol	TBCARB

ACCEPTABLE ENTRIES: (Cont.)

2,2-Dimethyl-5-(1-methylpropyl) tetrahydrofuran	DMPTHF
2,2-Dimethylbutane	22DMC4
2,2-Dimethylpentane	2DMPEN
2,2-Oxybis(ethanol)	OEGLYC
2,2'-[1,2-Ethanediylbis(oxy)] bis(ethanol)	TEGLYC
2,2',3,3',4,4',5,5'-Octachlorobiphenyl	2OCCB
2,2',3,4,4',5,6-Heptachlorobiphenyl	2HHPCB
2,2',3,4,5,5'-Hexachlorobiphenyl	25HXCB
2,2',3,4,5,5',6-Heptachlorobiphenyl	25HPCB
2,2',4,5,5'-Pentachlorobiphenyl	245PCB
2,2',5-Trichlorobiphenyl	225TCB
2,2',5,5'-Tetrachlorobiphenyl	2255CB
2,2,3,3-Tetramethylpentane	23TMP
2,2,4-Trimethyl-1,3-pentanediol	24T13P
2,2,4,4,7,7-Hexamethyloctahydro-1H-indene	247HOI
2,2,6-Trimethyloctane	226TMO
2,2,7,7-Tetramethyl-4,5-octadien-3-one	TMODDO
2,3-Benzopyrrole	INDOLE
2,3-Dichloro-1-propene	23C1PE
2,3-Dichlorophenol	23DCLP
2,3-Dihydrobenzofuran	COUMRN
2,3-Dimethylnaphthalene	23DNAP
2,3-Dimethyl-3-hexanol	23D3HL
2,3-Dimethylbutane	23DMC4
2,3-Dimethylpentane	23DMC5
2,3-Dimethylphenol	23DMP
2,3,4-Trimethyl-3-pentanol	TM3PL
2,3,4-Trimethyl-4-tetradecene	TRMTDE
2,3,4,5-Tetrachlorobiphenyl	2345CB
2,3,4,6-Tetrachlorophenol	2346CP
2,3,5-Trichlorophenol	235TCP
2,3,5-Trimethyldecane	235TMD
2,3,5,6-Tetrachloro-1,4-benzenedicarboxylic acid dimethyl ester	DCPA
2,3,5,6-Tetrachlorophenol	2356CP
2,3,6-Trimethylnaphthalene	236TMN
2,3,7-Trimethyldecane	237TMD
2,3,7,8-Tetrachlorodibenzofuran	TCDF
2,3,7,8-Tetrachlorodibenzo-p-dioxin	TCDD
2,4-Bis(isopropylamino)-6-methoxy-1,3,5-triazine	PROMET
2,4-DB	24DB
2,4-Dichlorophenol	24DCLP

ACCEPTABLE ENTRIES: (Cont.)

2,4-Dichlorophenoxyacetic acid	24D
2,4-Dichlorophenylacetic acid	DCAA
2,4-Dihydroxybenzoic acid, tris-trimethylsilyl	DBATTS
2,4-Dimethyl-2-pentanol	24M2PL
2,4-Dimethylaniline	24DMAN
2,4-Dimethylhexane	24DMHX
2,4-Dimethylpentane	24DMC5
2,4-Dimethylphenol	24DMPN
2,4-Dinitro-6-sec-butylphenol	DINO
2,4-Dinitrophenol	24DNP
2,4-Dinitrophenol-D3	24NPD3
2,4-Dinitrotoluene	24DNT
2,4'-Dichlorobiphenyl	24DCB
2,4,5-Trichlorophenol	245TCP
2,4,5-Trichlorophenoxyacetic acid	245T
2,4,6-Tribromophenol	246TBP
2,4,6-Trichloroaniline	246TCA
2,4,6-Trichlorophenol	246TCP
2,4,6-Trimethyloctane	246TMO
2,4,6-Trimethylpyridine	246MPY
2,4,6-Trimethoxybenzaldehyde	ATMBA
2,4,6-Trinitrophenol	246TNP
2,4,6-Trinitrophenol ammonium salt	NH4PIC
2,4,6-Trinitroresorcinol	246TNR
2,4,6-Trinitrotoluene	246TNT
2,4,7-Trimethyloctane	247TMO
2,5-Cyclohexadiene-1,4-dione	25C14D
2,5-Dichlorophenol	25DCLP
2,5-Diethyltetrahydrofuran	25ETHF
2,5-Dimethylphenanthrene	25DMPA
2,5-Dimethylphenol	25DMP
2,5-Dimethyltetrahydrofuran	25DTHF
2,5,6-Trimethyldecane	256TMD
2,6-Di-tert-butyl-4-methylphenol	26DBMP
2,6-Di-tert-butyl-4-cresol	26DBMP
2,6-Dichlorophenol	26DCLP
2,6-Dimethyloctane	26DMO
2,6-Dimethylphenol	26DMP
2,6-Dimethylstyrene	26DMST
2,6-Dimethylundecane	26DMUD
2,6-Dinitroaniline	26DNA

ACCEPTABLE ENTRIES: (Cont.)

2,6-Dinitrotoluene	26DNT
2,6,10,14-Tetramethylheptadecane	2TM4HPD
2,6,10,14-Tetramethylpentadecane	2TM4PD
2,6,10,15,19,23-Hexamethyl-2,6,10,14,18,22-tetracosahexaene	TTHMTCHE
2,6,11-Trimethyldodecane	2611MD
2,7-Dimethylnaphthalene	27DMAP
2,7-Dimethyloctane	27DMO
2,9-Dimethylundecane	29DMUD
2,10-Dimethylundecane	210DMU
3-(1-Methylethyl)-1H-2,1,3-benzothiadiazin-4(3H)-one-2,2-dioxide	BTAZON
3-(2,2-Dimethylpropoxy) cyclohexene	DMPCHE
3-(Chloromethyl) cyclohexane	3CMCH
3-(Hydroxymethyl)-4,4-dimethylpentanal	3HDMPL
3-(t-Butyl)-pentane	3E22MP
3-(t-Butyl) phenol	3TBUP
3-Amino-2,5-dichlorobenzoic acid	CAMBEN
3-Butenylpentyl ether	3BPETH
3-Chloro-1-propene	3C1C3E
3-Chlorophenol	3CLP
3-Chlorotoluene	3CLT
3-Cresol	3MP
3-Cyclohexyldecane	3CHXD
3-Ethyl-1,4-hexadiene	3EHXDE
3-Ethyl-2,2-dimethylpentane	3E22MP
3-Ethyl-2,5-dimethyl-3-hexene	3E25DH
3-Ethyl-4-methyl-2,5-furandione	EMFUR
3-Ethyl-5-(2-ethylbutyl) octadecane	3EEBOD
3-Ethylphenol	3EP
3-Hexen-2-one	3HXE2O
3-Hydroxy-2,7-dimethyl-4-(3H)-pteridinone	3HDMPT
3-Hydroxybenzaldehyde	3HYBA
3-Methoxy-2-cyclopenten-1-one	3M2C1O
3-Methoxyimidazole	3MOIMZ
3-Methoxytoluene	3MOT
3-Methyl-1-pentanol	3M1PL
3-Methyl-2-cyclohexen-1-one	3M2CHO
3-Methyl-2-hexanol	3M2HXL
3-Methyl-2-nitrophenol	2N3C
3-Methyl-2-pentene	3M2C5E
3-Methyl-4-chlorophenol	4CL3C
3-Methyl-5-propylnonane	3M5PNN

ACCEPTABLE ENTRIES: (Cont.)

3-Methyl-6-chlorophenol	6CL3C
3-Methylbiphenyl	3MBP
3-Methylbutanoic acid, 3,7-dimethyl-2,6-octadienyl ester	MBAIEH
3-Methylcholanthrene	3MCA
3-Methylcyclohexanone	3MCHXO
3-Methyldecane	3MDEC
3-Methylhexane	3MC6
3-Methylpentane	3MEPEN
3-Methylphenanthrene	3MPANR
3-Methylphenol	3MP
3-Methylundecane	3MUND
3-Nitroaniline	3NANIL
3-Nitrotoluene	3NT
3-Octanol	3OCTOL
3-Oxo-3-phenylpropanoic acid, ethyl ester	3OPPAE
3-Phenylpropanal	EOBDAS
3-Phenylpropanoyl chloride	3PC3AC
3-Propyltoluene	3PT
3-Quinuclidinyl benzilate	BZ
3,3-Dimethylhexane	33DMHX
3,3-Dimethylpentane	33DMPN
3,3'-Dichlorobenzidine	33DCBD
3,3',4,4'-Tetrachlorobiphenyl-D6	34CBD6
3,3,6-Trimethyl-1,5-heptadien-4-one	TMHPDO
3,4-Benzofluoranthene	34BZFA
3,4-Dichlorophenol	34DCLP
3,4-Dihydro-2H-1-benzopyran	DHBZPY
3,4-Dimethyl-1-decene	34D1DE
3,4-Dimethylphenol	34DMP
3,4-Epoxy-3-ethyl-2-butanone	3E2BO
3,4,4-Trimethyl-2-pentene	344TPE
3,4,5-Trimethyl-1-hexene	345T1H
3,4,5,6-Tetramethylphenanthrene	36TMPA
3,5-Dimethyl-2-cyclohexen-1-one	3DCHEO
3,5-Dimethyl-3-hexanol	35M3HL
3,5-Dimethylphenol	35DMP
3,5-Dinitroaniline	35DNA
3,5-Dinitrophenol	35DNP
3,5-Dinitrotoluene	35DNT
3,5,24-Trimethyltetracontane	TMTCON
3,5,5-Trimethyl-1-hexanol	TMHOL

ACCEPTABLE ENTRIES: (Cont.)

3,5,5-Trimethyl-2-cyclohexen-1-one	3TCHEO
3,6-Dichlorofluoren-9-one	36DF9O
3,6-Dimethyloctane	36DMO
3,7-Dimethylnonane	37DMNN
3,8-Dimethylundecane	38DMUD
4-(1-Methylethyl) heptane	41MEHP
4-(1-Methylethyl)-N-phenylaniline	4MENPA
4-(1-Methylethyl) toluene	PCYMEN
4-(1,1-Dimethylethyl)benzoic acid	DMEBZO
4-(2-Aminoethyl) pyrocatechol	DOPAM
4-(2,4-Dichlorophenoxy)butyric acid	24DB
4-Acetylmorpholine	4AMORP
4-Amino-2-nitrotoluene	4A2NT
4-Amino-3,5-dinitrotoluene	4A35DT
4-Aminobiphenyl	4ABP
4-Bromofluorobenzene	4BFB
4-Bromophenylphenyl ether	4BRPPE
4-Butoxy-3-penten-2-one	4B3P2O
4-Chloro-2-cresol	4CL2C
4-Chloro-3-cresol	4CL3C
4-Chloro-3-methyl-1-butene	4C3MBE
4-Chloro-m-cresol	4CL3C
4-Chloro-o-tolyloxyacetic acid	MCPA
4-Chloroaniline	4CANIL
4-Chlorocyclohexanol	4CCHXL
4-Chlorophenylphenyl ether	4CLPPE
4-Chlorotoluene	4CLT
4-Cresol	4MP
4-Ethyl-2-octene	4E2OCE
4-Ethyl-2,2,6,6-tetramethylheptane	4ETMHP
4-Fluoroaniline	4FANIL
4-Fluorotoluene	4FT
4-Hydroxy-3-methoxybenzaldehyde	4H3MBA
4-Hydroxy-3,5-dimethoxybenzaldehyde	4HDBA
4-Hydroxy-4-methyl-2-pentanone	DIACAL
4-Hydroxyazobenzene	4HAZOB
4-Hydroxybenzaldehyde	4HYBA
4-Iodomethylquinolidine	4IOMQU
4-Methoxycyclohexanol	4MOXCHL
4-Methoxyphenol	4MXP
4-Methyl-1-(1-methylethyl)-bicyclo[3.1.0]hex-3-one	4MMEBHE

ACCEPTABLE ENTRIES: (Cont.)

4-Methyl-2-pentanol	MIBCOH
4-Methyl-2-propyl-1-pentanol	4M2PPL
4-Methyl-3-penten-2-one	MESTOX
4-Methyl-2H-fluorene	4MFLRE
4-Methylbenzene sulfonamide	4MBSA
4-Methylbiphenyl	4MBP
4-Methyldibenzofuran	4MDBFU
4-Methylheptane	4MC7
4-Methylphenanthrene	4MPANR
4-Methylphenol	4MP
4-Methylpyrene	4MPYR
4-Nitroaniline	4NANIL
4-Nitrophenol	4NP
4-Nitrotoluene	4NT
4-t-Butyl-2-cresol	4TBU2C
4-t-Octylphenol	4TOP
4,4-Difluorobenzophenone	44DFBZ
4,4-Dimethyl-2-pentanol	4DM2PL
4,4-Dimethyl-2-pentene	44DMPE
4,4-Dimethylundecane	44DMUD
4,4'-Dichlorobenzophenone	44DCBZ
4,5-Dimethyl-2,6-bis (trimethylsiloxy) pyrimidine	DBTSPY
4,5,6,7,8,8A-Hexahydro-8A-methyl-2-(1H)-azulenone	HXHMAZ
4,6-Dinitro-2-cresol	46DN2C
4,6,8-Trimethyl-1-nonene	468T1N
4,7-Dimethylundecane	47DMUD
4,8-Dimethylhendecane	48DMHD
5-Chloro-o-cresol	5CL2C
5-Ethyl-2-methylheptane	5E2MHP
5-Ethyl-5-methyldecane	5E5MD
5-Methyl-2-hexanone	5M2HXO
5-Methyl-5-hydroxyhexanoic acid lactone	5MSHAL
5-Methylbenzo(C)acridine	MBZCAC
5-Norbornen-2-ol	5N2OL
5-Propyltridecane	5PTRD
5,7-Dichloro-2-methylbenzofuran	DCMBF
6-Aminohexanoic acid lactam	CAPLCT
6-Chloro-3-cresol	6CL3C
6-Ethyl-6-methylfulvene	6EMFV
6-Methyl-3-heptanol	6M3HPL
6-Methyldodecane	6MDOD

ACCEPTABLE ENTRIES (Cont.)

6-Methylpurine	6MEPUR
6-Methyltridecane	6MTRID
6-t-Butyl-2-cresol	6TBU2C
7-Hydroxynorbornadiene	HYNB
7-Methyltridecane	7MTRID
7,12-Dimethylbenz[A]anthracene	712DMA
7H-Benz[DE]anthracen-7-one	BDEANT
8-Methyl-1,8-nonanediol	8MNNDL
8-Methyldecanoic acid, methyl ester	C12AMM
9-Anthracenecarbonitrile	ANTRCN
9-Fluorenone	9FLENO
9-Methoxyanthracene	9MXANT
9-Methylbenz[A]anthracene	9MBAAN
9,10-Anthracenedione	ANTRQU
9,10-Dihydro-9,9-dimethylacridine	DHDMAC
9H-Carbazole	CARBAZ
9H-Fluoren-9-one	9HFLRE
10-Cyclopropylundecanoic acid, methyl ester	10CUDM
10-Methylundecanoic acid, methyl ester	10MUDM
10-Octadecenoic acid, methyl ester	10OEME
10% Methanol	10MEOH
12-Methyltetradecanoic acid, methyl ester	12MTDM
13-Tetradecynoic acid, methyl ester	13TDAM
14-Methylpentadecanoic acid, methyl ester	14MPME
15-Methylhexadecanoic acid, methyl ester	15MHME
15-Tetracosenoic acid, methyl ester	TCSAME
16-Methylheptadecanoic acid, methyl ester	16MHME
17-Pentatriacontene	17PTCE
50% 1M NaOH - 50% Methanol	NAOHME
50% Hexane - 50% acetone	50H50A
50% Methylene chloride - 50% acetone	50M50A
50% Water - 25% Methanol - 25% acetonitrile	50WMAN
Acenaphthene	ANAPNE
Acenaphthene-D10	ACND10
Acenaphthylene	ANAPYL
Acetic acid, cyclohexyl ester	AACHXE
Acetic acid, ethyl ester	C2AEE
Acetic acid, vinyl ester	C2AVE
Acetone	ACET
Acetonitrile	CH3CN
Acetophenone	ACPHN

ACCEPTABLE ENTRIES (Cont.)

Acidity	ACIDIT
Acids (high molecular weight)	ACIHMW
Acrolein	ACROLN
Acrylonitrile	ACRYLO
Aroclor 1221	AC1221
Adamsite	DM
Alcohols (high molecular weight)	ALHMW
Aldehydes	ALDEHY
Aldrin	ALDRN
Aliphatic alcohols	ALAL
Aliphatic hydrocarbons	ALHC
Alkalinity	ALK
Alkalinity - bicarbonate	ALKBIC
Alkalinity - carbonate	ALKCAR
Alkalinity - hydroxide	ALKHYD
Alkanes	ALKN
Allyl chloride	3C1C3E
Allyl ether	AYLETH
alpha, alpha-Dimethylbenzenemethanol	BZAL2M
alpha, alpha-Dimethylphenethylamine	AADMP
alpha-Benzenehexachloride	ABHC
alpha-Bromotoluene	BZYLBR
alpha-Chlordane	ACLDAN
alpha-Endosulfan	AENSLF
alpha-Hexachlorocyclohexane	ABHC
alpha-Methylbenzyl-2-chloroacetoacetate	MBZCL
alpha-Methylbenzyl acetoacetate	MBZA
alpha-Methylbenzyl alcohol	MBOH
alpha-Pinene	ALPHPN
alpha-Trinitrotoluene	246TNT
Alpha gross	ALPHAG
Alpha gross-field	ALPGF
Alpha gross-lab	ALPGL
Alpha gross-soluble acid fraction	ALPGLA
Alpha gross-soluble water fraction	ALPGLW
Aluminum	AL
Amenable cyanide	CYNAM
Aminoguanidine	AMGD
Ammonia	NH3
Ammonia nitrogen	NH3N2
Ammonium	NH4

ACCEPTABLE ENTRIES: (Cont.)

Ammonium dihydrogen phosphate	ADHP
Ammonium nitrate	NH4NIT
Ammonium picrate	NH4PIC
Amosite asbestos	AMOS
Aniline	ANIL
Anion cluster	ANILNT
Anthophyllite asbestos	ANPHO
Anthracene	ANTRC
Anticholinesterase	ACHE
Antimony	SB
Arsenic	AS
Arsenic extractable	ASEXT
Arsenic total	ASTOT
Asbestos	ASBEST
Anthraquinone	ANTRQU
Atrazine	ATZ
Azoxybenzene	AZACX
Azinphos methyl	AZM
Barium	BA
Bentazon	BTAZON
Benzal chloride	BAC
Benzaldehyde	BENZAL
Benzanthrene	BENZA
Benzene	C6H6
Benzene-D6	C6D6
Benzenephosphonic acid	BZPA
Benzofluoranthene	BZFANT
Benzidine	BENZID
Benzo[A]anthracene	BAANTR
Benzo[A]phenanthrene	BZAPAN
Benzo[A]pyrene	BAPYR
Benzo[B]fluoranthene	BBFANT
Benzo[B]fluorene	BBFLRE
Benzo[B]naphtho[1,2-D]thiophene	BBNTHP
Benzo[B]naphtho[2,3-D]furan	BBNFN
Benzo[B]pyridine	QUINOL
Benzo[B]thiophene	BZOTHP
Benzo[B]triphenylene	BZOTRP
Benzo[C]phenanthrene	BZCPAN
Benzo[E]pyrene	BEPYR
Benzo[G,H,I]fluoranthene	BGHIFA

ACCEPTABLE ENTRIES: (Cont.)

Benzo[G,H,I]perylene	BGHIPY
Benzo[H]quinoline	BZHQUN
Benzo[J]fluoranthene	BJFANT
Benzo[K]fluoranthene	BKFANT
Benzo[B]thiophene	BZBTHP
Benzoic acid	BENZOA
Benzoic acid, ammonium salt	BZONH4
Benzoic acid, methyl ester	BZOAME
Benzothiazole	BTZ
Benzotrichloride	BTC
Benzyl alcohol	BZALC
Benzyl bromide	BZYLBR
Benzyl chloride	BZYLCL
Beryllium	BE
Beryllium 7	BE7
beta-Benzenehexachloride	BBHC
beta-Chlordane	BCLDAN
beta-Endosulfan	BENSLF
beta-Hexachlorocyclohexane	BBHC
Beta gamma gross	BGGAG
Beta gross	BETAG
Beta gross-field	BETGF
Beta gross-lab	BETGL
Beta gross-soluble acid fraction	BETGLA
Beta gross-soluble water fraction	BETGLW
BHC - nonspecific	BHC
Bicarbonate	HCO3
Bicyclo[2.2.1]hepta-2,5-diene	BCHPD
Bicyclo[3.1.0]hexane	BCY3HX
Bicyclohexyl	BICYHX
Binaphthyl	BINAP
Biological oxygen demand	BOD
Bis (2-chloroethoxy) methane	B2CEXM
Bis (2-chloroethyl) ether	B2CLEE
Bis (2-chloroethyl) sulfide	HD
Bis (2-chloroisopropyl) ether	B2CIPE
Bis (2-ethylhexyl) phthalate	B2EHP
Bis (methoxymethyl) sulfone	BCMSO2
Bis (methoxymethyl) sulfoxide	BCMSO
Bis (chloromethyl) ether	BCLME
Bis (diisopropylaminoethyl) disulfide	DIADS

ACCEPTABLE ENTRIES: (Cont.)

Bis (diisopropylaminoethyl) methylphosphonate	[illegible]
Bis (diisopropylaminoethyl) methylphosphonate	[illegible]
Bis (diisopropylamino) ethanethiol	DIAET
Bis (diisopropylamino) ethanol	DIAEL
Bis (diisopropylamino) ethylsulfide	DIAS
Bis (diisopropylamino) ethylsulfonate	DIASO2
Bis (pentafluorophenyl) phenyl phosphine	C18SFP
Bis (trimethylsilyl) oxalic acid	BTMSOA
Bismuth	BI
Bismuth 212	BI212
Bismuth 214	BI214
Bladex	BLDX
Bolstar	BOLS
Boron	B
Bromacil	BRMCIL
Bromide	BR
Bromobenzene	BRC6H5
Bromochloromethane	BRCLM
Bromodichloromethane	BRDCLM
Bromoethane	ETHBR
Bromoform	CHBR3
Bromomethane	CH3BR
Butane	C4
Butanedioic acid, dimethyl ester	BDADME
Butanoic acid, 1-hexyl ester	BAHXE
Butylbenzene	BUC6H5
Butylbenzyl phthalate	BBZP
Butylethyl ether	BUETH
Butylmethyl phthalate	BMP
Butylphthalyl butylglycolate	BPBG
C17 alkane	C17A
C18 alkane	C18A
C18H30O Unknown	C18UNS
C22H40O Unknown	C22UNS
C8 alkane	C8A
Cadmium	CD
Calcium	CA
Calcium carbonate solution	CACO3S
Calculated hardness	CHARD
Camphor	CAMP
Caproic acid	HEXAC

ACCEPTABLE ENTRIES (Cont.)

Caprolactam	CAPLCT
Carbamic acid, methyl ester	CAME
Carbamide	UREA
Carbon dioxide	CO2
Carbon disulfide	CS2
Carbon monoxide	CMONOX
Carbon tetrachloride	CCL4
Carbonate	CO3
Carbonic acid, dimethyl ester	CIADME
Carbonyl chloride	CG
Carbonyl diamide	UREA
Cardiazole	MTRZL
Catechol	CATOL
Cation exchange capacity	CEC
Cerium	CE
Cerium 141	CE141
Cerium 144	CE144
Cesium	CS
Cesium 134	CS134
Cesium 137	CS137
Chemical oxygen demand	COD
CHLORAMBEN	CAMBEN
Chlorate	CLO3
Chlordane	CLDAN
Chlordene	CLDEN
Chloride	CL
Chlorinated benzenes	CLXB
Chlorinated naphthalenes	CLXNAP
Chlorine	CL2
Chlorine demand	CLD
Chloroacetaldehyde	CAAH
Chloroacetic acid	CLC2A
Chloroacetophenone	CN
Chlorobenzene	CLC6H5
Chlorobenzene-D5	CLC6D5
Chlorocyclohexane	[illegible]
Chlorodifluoromethane	[illegible]
Chlorodinitrobenzene isomer	[illegible]
Chloroethane	C2H5CL
Chloroethene	C2H3CL
Chlorofluoromethane	CCLF

ACCEPTABLE ENTRIES: (Cont.)

Chloroform	CHCL3
Chloroform-D	CDCL3
Chloromethane	CH3CL
Chloromethyl methyl ether	CMME
Chloronaphthalenes	CLNAP
Chlorophenols	CLP
Chlorpyrifos	CPYR
Chlorotoluene	CT
Cholestane	CHOLA
Chromate	CRO4
Chromium	CR
Chrysene	CHRY
Chrysene-D12	CYSD12
Chrysotile asbestos	CHRYS
cis-1-Bromo-2-chlorocyclohexane	CBCCH
cis-1,2-Diacetoxycyclohexane	CDACH
cis-1,2-Dichloroethene	C12DCE
cis-1,2-Dichloroethylene	C12DCE
cis-1,3-Dichloropropene	C13DCP
cis-1,3-Dichloropropylene	C13DCP
cis-1,4-Dichloro-2-butene	CDCBU
cis-4-Hexen-1-ol	C4HX1L
cis-Chlordane	CCLDAN
Cobalt	CO
Cobalt 57	CO57
Cobalt 60	CO60
Color	COLOR
Copper	CU
Copper extractable	CUEXT
Copper total	CUTOT
Corrosivity (tendency to corrode)	CORRTY
Coumaphos	COUMA
Coumaran	COUMRN
Cresols	CSOL
Crocidolite asbestos	CROCO
Cryoflex	CRYOF
Cumene	ISOPRZ
Cyanide	CYN
Cyanide, free form	CYNF
Cyanogen chloride	CK
Cyclododecane	CYDODC

ACCEPTABLE ENTRIES: (Cont.)

Cyclohexane	CYHX
Cyclohexanol	C6HOH
Cyclohexanone	CHONE
Cyclohexene	CYHXE
[illegible]	[illegible]
Cyclohexylbenzene	CYHXB
Cyclonite	RDX
Cyclooctatetraene	CYOCTE
Cyclopentadiene	CYPD
Cyclopentanecarboxaldehyde	CPCXAL
Cyclopentanone	CPO
Cyclopentene	CYPNE
Cyclotetramethylenetetranitramine	HMX
D-(-)-Pantolyl lactone	DPNTLL
Dacthal	DCPA
Dalapon	DALA
DCAA	DCAA
Decafluorobiphenyl	F10BP
Decamethylcyclopentasiloxane	DCMPSX
Decane	C10
Decylbenzene	DECYLB
Deionized water	DIH2O
delta-Benzenehexachloride	DBHC
delta-Hexachlorocyclohexane	DBHC
Demeton-O	DEMO
Demeton-S	DEMS
Di-N-butyl phthalate	DNBP
Di-N-octyl phthalate	DNOP
Di-N-octyl phthalate-D4	DNOPD4
Di-N-pentyl phthalate	DNPP
Diacetone alcohol	DIACAL
Diazinon	DIAZ
Dibenz[A,B]anthracene	DBABA
Dibenz[A,H]anthracene	DBAHA
Dibenz[A,J]acridine	DBAJA
Dibenzofuran	DBZFUR
Dibenzofurans - nonspecific	FURANS
Dibenzothiophene	DBZTHP
Dibromochloromethane	DBRCLM
Dibromochloropropane	DBCP
Dibromodichloromethane	DBRDCM

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ACCEPTABLE ENTRIES (Cont.)

Dibromomethane	DBRM
Dibutyl adipate	HXADBF
Dibutyl chlorendate	DBCLEF
Dicamba	DCAMBA
Dichloroacetonitrile	CL2ACN
Dichlorobenzene - nonspecific	DCLB
Dichlorobenzenes	CL2BZ
Dichlorobenzophenone	DCBPH
Dichlorobiphenyls	CL2BP
Dichlorodifluoromethane	CCL2F2
Dichloroethyl amine	ED
Dichlorofluoromethane	FREON
Dichloroformoxime	CX
Dichloromethane	CL2CH2
Dichloronaphthalenes	CL2NAP
Dichlorophenlactic	DCPL
Dichlorophenols	DICLP
Dichlorophenyl amine	PD
DICHLOROPROP	DICP
Dicyclohexyl phthalate	DCHP
Dicyclopentadiene	DCPD
Dieldrin	DLDRN
Diethanolamine	CHNO2
Diethyl ether	DEETH
Diethyl methylphosphonate	TRO
Diethyl phthalate	DEP
Diethyl phthalate-D4	DEPD4
Diethylamine	DEA
Diethyldimethyl diphosphonate	DEDMP
Diethylene glycol	DEGLYC
Diethyleneglycol monomethyl ether	2MOEXL
Diisobutyl phthalate	DIBP
Diisooctyl phthalate	DIOP
Diisopropyl ether	DIPETH
Diisopropyl ketone	DIPK
Diisopropyl methylphosphonate	DIMP
Diisopropyl urea	DIPUR
Diisopropyldimethyl diphosphonate	DIDDP
Dimethoate	DMOATE
Dimethoxydimethylsilane	DMXDMS
Dimethyl adipate	HXADME

ACCEPTABLE ENTRIES (Cont.)

Dimethyl arsenic acid	ME2ALA
Dimethyl disulfide	DMDS
Dimethyl dithiocarbamate	DMCAB
Dimethyl ether	DMETH
Dimethyl isophthalate	DMIP
Dimethyl mercury	ME2HG
Dimethyl methylphosphate	DMMP
Dimethyl phenol	DMPHEN
Dimethyl phthalate	DMP
Dimethyl-2-propanone	DIPK
Dimethyl-2,3,5,6-tetrachloroterephthalate acid	PCLORM
Dimethylaniline	NNDMA
Dimethylcyclopentane - nonspecific	DMCP
Dimethylhydroxy benzene	DMPHEN
Dimethylnaphthalenes	ME2NAP
Dimethylpoly siloxane	PDMSLX
Dimethylundecanes	ME2C11
Dinitrotoluene isomer	DNTISO
DINOSEB	DINO
Dioctyl adipate	DOAD
Dioctyl azelate	DOAZ
Dioctyl ether	DOETH
Dioxin	TCDD
Diphenyl	DPHNY
Diphenyl ether	DPETH
Diphenyl sulfide	DPSULF
Diphenyl sulfoxide	DPSO
Diphenylamine	DPA
Diphenylhydrazines - nonspecific	DPH
Diselenо dianilide	DSEDIN
Dissolved organic carbon	DOC
Dissolved oxygen	DO
Distilled mustard	HD
Disulfoton	DSTON
Dithiane	DITHI
dl-2-(3-Hydroxyphenyl) glycine	DL2HPG
Dodecane	C12
Dodecylbenzene	DODECB
Dopamine	DOPAM
Dursban	DURS
Eicosane	C20

ACCEPTABLE ENTRIES: (Cont.)

Endosulfan I	AENSLF
Endosulfan II	BENSLF
Endosulfan sulfate	ESFSO4
Endrin	ENDRN
Endrin aldehyde	ENDRNA
Endrin ketone	ENDRNK
Ethanol	ETOH
Ethanolamine	CHNO
Ether - nonspecific	ETHER
Ethion	ETHION
Ethoprop	ETHOPR
Ethyl-2,2-bis (4-chlorophenyl) glycolate	EBCPGL
Ethyl acetate	C2AKE
Ethyl bromide	ETHBR
Ethyl methacrylate	ETMACR
Ethyl methanesulfonate	EMS
Ethyl methylphosphinate	YL
Ethyl methylphosphonate	EMPA
Ethyl methylphosphonic acid	EMPA
Ethyl phenol	EPHEN
Ethyl phosphate	ETHPO4
Ethyl-N-hexyl ether	ENHETH
Ethyl-N,N-dimethyl phosphoramidocyanidate	GA
Ethylbenzene	ETC6H5
Ethylbenzene-D10	ETBD10
Ethylcyclohexane	ETCYHX
Ethylene glycol, monoethyl ether	EGMEE
Ethylhydroxy benzene	EPHEN
Ethylmethyl benzene	ETMEBZ
Europium	EU
Explosive spray	XPLOSV
Extraction procedure toxic organics	EPTOX
Famphur	FAMPHR
Farnesol	FARN
Fatty alcohols	FATAL
Fecal coliform	COLI
Fenitrothion	FST
Fenthion	FNT
Fluoranthene	FANT
Fluorene	FLRENE
Fluoride	F

ACCEPTABLE ENTRIES: (Cont.)

Fluoroacetic acid	FC2A
Foaming agents	MBAS
Formaldehyde	FORM
Fumaric acid, bis-phenylethyl ester	FABPEE
Fumaric acid, cyclohexyl ester	FACHXE
Freon	FREON
Freon 112	FRN112
Gallium	GALM
gamma-Benzenehexachloride	LIN
gamma-Chlordane	GCLDAN
gamma-Hexachlorocyclohexane	LIN
Gamma gross	GAMAG
Gamma scan	GAMMAS
Gamma screen	GAMMAS
GC-MS dye scan	DYSCAN
GC-MS organic scan	MSSCAN
Germanium	GE
Gold	AU
Green dye	GRNDY
Guanidine nitrate	GUNIT
Halowax 1013	HWX013
Halowax 1099	HWX099
Hendecane	C11
Heneicosane	C21
Heptachlor	HPCL
Heptachlor epoxide	HPCLE
Heptachlorobiphenyls	CL7BP
Heptachloronorbornene	C7NB1
Heptachloronorbornadienes	CL7NB
Heptadecane	C17
Heptadecanoic acid, methyl ester	C17AM
Heptane	C7
Heptanoic acid	C7A
Hexachlorobenzene	CL6BZ
Hexachlorobiphenyls	CL6BP
Hexachlorobutadiene	HCBD
Hexachlorocyclopentadiene	CL6CP
Hexachloroethane	CL6ET
Hexachloronorbornadiene	HCNB
Hexacosane	HXC05
Hexadecane	C16

ACCEPTABLE ENTRIES (Cont.)

Hexadecanoic acid	C16A
Hexadecanoic acid, bis (2-ethylhexyl) ester	C16AEH
Hexadecanoic acid, butyl ester	C16ABE
Hexadecanoic acid, dimethyl ester	C16ADM
Hexadecanoic acid, methyl ester	C16AME
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX
Hexamethylcyclotrisiloxane	HXMTSX
Hexamethylene tetramine	HXMETA
Hexane	HEXANE
Hexanedioic acid, bis (2-ethylhexyl) ester	HXAB2E
Hexanedioic acid, dibutyl ester	HXADBE
Hexanedioic acid, dimethyl ester	HXADME
Hexanedioic acid, dioctyl ester	DOAD
Hexanoic acid	HEXAC
Hexatriacontane	C36
Hexavalent chromium	CRHEX
Holmium	HO
HPLC-grade water	HPLH2O
Hydrazine	HYDRZ
Hydrindane	HYDRND
Hydrocarbons (all molecular weights)	CALLMW
Hydrocinnamyl chloride	3PC3AC
Hydrocyanic acid	AC
Hydrogen cyanide	AC
Hydrogen sulfide	H2S
Hydrolyzable phosphate	HPO4
Hypochlorite	HTH
Ignitability	IGNIT
Indene	INDENE
Indeno(1,2,3-C,D)pyrene	ICDPYR
Indole	INDOLE
Iron	FE
Isobutane	2MC3
Isodrin	ISODR
Isoheptane	2MC6
Isooctane	2MC7
Isopentane	2MC4
Isophorone	ISOPHR
Isopropyl methylphosphonate	IMPA
Isopropyl methylphosphonic acid	IMPA
Isopropyl methylphosphonofluoridate	GB

ACCEPTABLE ENTRIES (Cont.)

Isopropylamine	IPA
Isopropylbenzene	ISOPBZ
Isoquinoline	ISOQUN
Kerosene	KENE
Lactic acid, cyclic bimolecular ester	LACYBR
Lanthanum	LA
Lanthanum 140	LA140
Lauric acid	LAURIC
Lead	PB
Lead 210	PB210
Lead 212	PB212
Lead 214	PB214
Lead styphnate	PBSTY
Levinstein mustard	H
Lewisite	L
Lewisite oxide	LO
Lindane	LIN
Lipids, percentage	LIPID
Lithium	LI
m-Xylene	13DMB
Magnesium	MG
Malathion	MLTHN
Malononitrile	MALO
Manganese	MN
Manganese 54	MN54
MCPA	MCPA
MCPP	MCPP
Melamine	MELAM
Mercury	HG
Mercury extractable	HGEXT
Mercury total	HGTOT
Merphos	MERP
Mesityl oxide	MESTOX
Methane	CH4
Methanol	MEOH
Methoxychlor	MEXCLR
Methyl-2-heptanols	ME2HPL
Methyl-2-heptanones	ME2HPN
Methyl aldehyde	FORM
Methyl arsonic acid	MEAOA
Methyl benzoate	BZOAME

ACCEPTABLE ENTRIES: (Cont.)

Methyl isobutyl carbinol (4-methyl-2-pentanol)	MIBCOH
Methyl mercury	MEHG
Methyl mercury chloride	MEHGCL
Methyl methanesulfonate	MMS
Methyl oxirane	PROPOX
Methyl sulfide	MES
Methyl trithion	MTRITN
Methyl-N-butyl ketone	MNBK
Methylcyclobutane	MECYBU
Methylcyclodecane	MECYDC
Methylcyclohexane	MECC6
Methylcyclopentane	MECYPE
Methylene bromide	CH2BR2
Methylene chloride	CH2CL2
Methylene chloride-D2	CD2CL2
Methylethyl ketone	MEK
Methylethyl phenol	MEPHEN
Methylethylhydroxy benzene	MEPHEN
Methylhydrazine	MHYDRZ
Methylisobutyl ketone	MIBK
Methylisopropyl ketone	MIPK
Methylnaphthalenes	METLAP
Methylpentyl ketone	2C7O
Methylphenols	MP
Methylphosphonic acid	MPA
Methylpropyl ketone	MPK
Methylene blue active substance	MBAS
Metrazol	MTRZL
Mevinphos	MEVIN
Milli-Q-filtered water	MQFH2O
Mirex	MIREX
Molybdenum	MO
Myristic acid	C14A
N-(2-Hydroxyethyl)-decanamide	NHEDCA
N-(4-Chlorophenyl)-3-phenyl-2-propenamide	NCPPPA
N-Butyl-4-methylbenzenesulfonamide	NBMBSA
n-Butyl ether	NBUETH
N-Ethyl-2-propenamide	NE2PLA
N-Ethylcyclohexylamine	NECHXA
N-Methyl-N-nitrosoaniline	NMNSOA
N-Methyl-N,2,4,6-tetranitroaniline	TETRYL

ACCEPTABLE ENTRIES: (Cont.)

N-Methylaniline	NMANIL
N-Methylcarbamic acid, 1-naphthyl ester	NMCANE
N-Nitrosodihexylamine	NDHXA
N-Nitroso-4-hydroxyproline	NN4HPL
N-Nitrosodi-N-butylamine	NNDNBA
N-Nitrosodi-N-propylamine	NNDNPA
N-Nitrosodimethylamine	NNDMEA
N-Nitrosodiphenylamine	NNDPA
N-Nitrosopropylisopropylamine	NNPIPA
N-Nitrosopiperidine	NNPIP
N-Pentamide	PENAMD
N,4-Dimethylbenzenesulfonamide	NDMBSA
N,N-Bis(2-hydroxyethyl)dodecanamide	HEDODA
N,N-Diethyl-3-methylbenzamide	DEMBZA
N,N-Dimethyl-1,2-ethanediamine	DMETDA
N,N-Dimethylaniline	NNDMA
N,N,4-Trimethylbenzenesulfonamide	NTMBSA
Naled	NALED
Naphthalene	NAP
Naphthalene-D8	NAPD8
Naphthoquinone	NPQ
Neodymium	ND
Neopentyl alcohol	TBCARB
Nickel	NI
Nickel 63	NI63
Niobium	NIOB
Nitramine	TETRYL
Nitrate	NO3
Nitrite	NO2
Nitrite, nitrate - nonspecific	NIT
Nitroaromatics	NITARO
Nitrobenzene	NB
Nitrobenzene-D5	NBD5
Nitrocellulose	NC
Nitrocellulose 12.6%N	NC1
Nitrocellulose 13.45%N	NC2
Nitrogen by Kjeldahl Method	N2KJEL
Nitrogen dioxide	NDIOX
Nitrogen mustard	HN
Nitroglycerine	NG
Nitroguanidine	NQ

ACCEPTABLE ENTRIES: (Cont.)

N-Nitrosodi-N-propylamine	NDNPA
Nonadecane	C19
Nonadecanoic acid	C19A
Nonane	C9
Nonanedioic acid, dimethyl ester	NNADME
Nonpurgeable organic halides	NPOX
Nonyl phenol (all isomers)	NONPHE
[illegible]	NCLN
o-Chlorobenzaldehyde	CBA
o-Chlorobenzoic acid	CBOA
o-Chlorobenzylidene malononitrile	2CBMN
O-Ethyl methylphosphonate	OEMP
O-Ethyl-S-(2-diethylaminoethyl) methylphosphonothiolate	VM
O-Ethyl-S-(2-diisopropylaminoethyl) methylphosphonothiolate	VX
o-Xylene	12DMB
Octadecamethylcyclononasiloxane	ODMNSX
Octadecane	C18
Octadecanoic acid	ODECA
Octadecanoic acid, (2-phenyl-1,3-dioxolan-4-yl) methyl ester	ODAPDM
Octadecanoic acid, butyl ester	C18ABE
Octadecanoic acid, ethyl ester	C18AE
Octadecanoic acid, methyl ester	C18AME
Octadecanoic acid, octadecyl ester	C18AOD
Octamethylcyclotetrasiloxane	OMCTSX
Octane	C8
Octanedioic acid, dimethyl ester	OCADME
Octanoic acid, methyl ester	C8AME
Odor	ODOR
Oil & grease	OILGR
Organophosphates	OPO4
Orthophosphate	PO4ORT
Oxacyclononane	OXCN
Oxalic Acid	OXAL
Oxygen	O2
Ozone	OZONE
p-Chlorophenylmethyl sulfide	CPMS
p-Chlorophenylmethyl sulfone	CPMSO2
p-Chlorophenylmethyl sulfoxide	CPMSO
p-Cymene	PCYMEN
p-Dimethylaminoazobenzene	PDMAB
p-Toluenesulfonic acid, heptyl ester	TSAHPE

ACCEPTABLE ENTRIES: (Cont.)

p-Xylene	14DMB
Palmitic acid	C16A
Parathion	PRTHN
Parathion methyl	MPRTHN
Particulate matter	PARTIC
PCB 1016	PCB016
PCB 1221	PCB221
PCB 1232	PCB232
PCB 1242	PCB242
PCB 1248	PCB248
PCB 1254	PCB254
PCB 1260	PCB260
PCB 1262	PCB262
Pentachlorobenzene	CL5B
Pentachlorobiphenyls	CL5BP
Pentachloroethane	CL5ET
Pentachlorohexane	PCH
Pentachloronitrobenzene	PCNB
Pentachlorophenol	PCP
Pentacosane	C25
Pentadecane	C15
Pentadecanoic acid	C15A
Pentaerythritol tetranitrate	PETN
Pentafluorophenol	PFP
Pentane	PENTAN
Pentanoic acid	C5A
Pentanoic acid, 2-methylbutyl ester	PA2MBE
Pentatriacontane	C35
Perthane	PERTHN
Perylene-D12	PYLD12
Petroleum distillates	PETDIL
pH	PH
pH as tested in the field	PH-F
Phenacetin	PHENAC
Phenanthrene	PHANTR
Phenanthrene-D10	PHAD10
Phenol	PHENOL
Phenol-D5	PHEND5
Phenol-D6	PHEND6
Phenolics - nonspecific	PHENLC
Phenoxyacetic acid	PHXAA

ACCEPTABLE ENTRIES: (Cont.)

Phenylacetic acid	PHENAA
Phenylcyclohexane	CYHXB
Phorate	PHOR
Phosgene	CG
Phosgene oxime	CX
Phosphate	PO4
Phosphoric acid	H3PO4
Phosphoric acid, diethyl 4-nitrophenyl ester	PAD4NE
Phosphoric acid, octyldiphenyl ester	PAODPE
Phosphoric acid, triethyl ester	ETHPO4
Phosphoric acid, triphenyl ester	PATPE
Phosphorus	P4
Phthalates	PHTHL
Phthalic acid	PHTHA
PICLORAM	PCLORM
Picric acid	246TNP
Pinacolyl methylphosphonofluoridate	GD
Piperidine	PIPER
Plutonium 238 isotope	PU238
Plutonium 239 isotope	PU239
Polydimethyl siloxane	PDMSLX
Polyethylene glycol ethers	PEGE
Polynuclear aromatic hydrocarbons	PAH
Potassium	K
Potassium 40	K40
Primatol	PROMET
Prometon	PROMET
Pronamide	PRONA
Propanoic acid, 2-hydroxydecyl ester	PA2HDE
Propanoic acid, 2-methylbutyl ester	C3A2MB
Propanoic acid, methyl ester	C3AME
Propanoic acid, t-butyl ester	PATBUE
Propyl methylphosphonic acid	PMPA
Propylformamide	PRCMHS
Propylene oxide	PROPOX
Protactinium 234	PA234
Prothiophos	TOKU
Purgeable organic halogen	POX
Pyrene	PYR
Pyrene-D10	PYRD10
Pyridine	PYRDIN

ACCEPTABLE ENTRIES: (Cont.)

Quinoline	QUINO
Radium	RA
Radium 223	RA223
Radium 226	RA226
Radium 228	RA228
Reactivity	REACTY
Red dye	REDDY
Resin acids	RESACI
Resorcinol	RESO
Ronnel	RON
Ruthenium 103	RU103
Ruthenium 106	RU106
S-2-Diisopropylaminoethyl methylphosphonic acid	EA2192
S-Diisopropylaminoethyl methylphosphonothioate	DIAEP
Salicylaldehyde	2HBNZL
Saline	SALINE
Salinity	SALINI
Sarin	GB
Saturated hydrocarbons (C16)	C16SAT
Scandium	SC
Selenium	SE
Settleable solids	SSOL
Silica	SI
Silicate	SIL
Silver	AG
Silvex	SILVEX
Sodium	NA
Sodium 22	NA22
Sodium hypochlorite	NACLO
Soman	GD
Specific conductivity	COND
Specific conductivity as tested in the field	COND-F
Squalene	SQUAL
Stearic acid	ODECA
Steroids	STERO
Stigmasterol	STIGMA
Stirophos	STIR
Strontium	SR
Strontium 90	SR90
Styphnate ion	STYPH
Styphnic acid	246TNR

Test Name (Analyte) 8.24

ACCEPTABLE ENTRIES: (Cont.)

Styrene	STYR
Styrene oxide	12EPEB
Sulfate	SO4
Sulfide	SULFID
Sulfite	SO3
Sulfotepp	SPOTEP
Sulfur	S
Sulfur Dioxide	SO2
Sulfur monochloride	S2CL2
Sulfuric acid, dimethyl ester	SUADME
Super tropical bleach	STB
Supona	SUPONA
Tabun	GA
Tantalum	TA
Taste	TASTE
Tellurium	TE
Temperature	TEMP
Temperature as tested in the field	TEMP-F
Terphenyl-D14	TRPD14
tert-Butanol	2M2C3L
tert-Butylcarbinol	TBCARB
tert-Butylmethyl ether	2MOMC3
tert-Dodecanethiol	TDODTL
Tetrachlorobenzenes	TCB
Tetrachlorobiphenyls	CL4BP
Tetrachlorocyclopentene	TETPT
Tetrachlorodifluoroethane	FRN112
Tetrachloroethene	TCLEE
Tetrachloroethylene	TCLEE
Tetrachloronaphthalenes	CL4NAP
Tetrachlorophenol	TTCP
Tetrachlorvinphos	STIR
Tetracosane	TCOS
Tetradecamethyl hexasiloxane	TDMHSX
Tetradecane	C14
Tetradecanoic acid	C14A
Tetradecanoic acid, methyl ester	C14AME
Tetraglyme	TGLYME
Tetrahydrofuran	THF
Tetrahydropyranyl-2-methanol	THP2ML
Tetralin	THNAP

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8.24 Test Name (Analyte)

ACCEPTABLE ENTRIES: (Cont.)

Tetramethylphenanthrene	TMPHAN
Tetramethylurea	TMUR
Tetrazene	TETR
Thallium	TL
Thallium 208	TL208
Thiobismethane	MES
Thiobutyric acid, S-decyl ester	TBASDE
Thiocyanate	SCN
Thiodiglycol	TDGCL
Thiodiglycolic acid	TDGCLA
Thiodiphosphoric acid, tetraethyl ester	SPOTEP
Thiophene	TPH
Thorium	TH
Thorium 227	TH227
Thorium 230	TH230
Thorium 232	TH232
Thorium 234	TH234
Tin	SN
Titanium	TI
Tokuthion	TOKU
Toluene	MEC6H5
Toluene-D8	MEC6D8
Total coliform	TOTCOL
Total cyanide	TCYN
Total dissolved solids	TDS
Total gravimetric, acid fraction	TOTGAF
Total hardness	HARD
Total heptachlorodibenzofurans	THPCDF
Total heptachlorodibenzo-p-dioxins	THPCDD
Total hexachlorodibenzofurans	THCDF
Total hexachlorodibenzo-p-dioxins	THCDD
Total mercury	TOTHG2
Total mononitrotoluenes	TMNT
Total octachlorodibenzofurans	TOCDF
Total octachlorodibenzo-p-dioxins	TOCDD
Total organic carbon	TOC
Total organic halogens	TOX
Total PCBs	TOTPCB
Total pentachlorodibenzofurans	TPCDF
Total pentachlorodibenzo-p-dioxins	TPCDD
Total petroleum hydrocarbons	TPHC

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Test Name (Analyte) 8.24

ACCEPTABLE ENTRIES: (Cont.)

Total phosphates	TPO4
Total solids	TSOLID
Total sulfur	TS
Total suspended solids	TSS
Total tetrachlorodibenzofurans	TTCDF
Total tetrachlorodibenzo-p-dioxins	TTCDD
Total uranium	TU
Total value of all DDT, DDE, DDD isomers	TOTDDT
Total volatile solids	TVS
Toxaphene	TXPHEN
Tremolite-actinolite asbestos	TREACT
trans-1-Bromo-2-butylcyclopropane	T1B2BC
trans-1,2-Cyclohexanediol, cyclic sulfite	TCHDCS
trans-1,2-Dichloroethene	T12DCE
trans-1,2-Dichloroethylene	T12DCE
trans-1,3-Dichloropropene	T13DCP
trans-1,4-Dichloro-2-butene	TDCBU
trans-2-Decene	T2DEC
trans-Chlordane	TCLDAN
Triacontanoic acid, methyl ester	C30AME
Tributyl phosphate	TBP
Tributylamine	TBA
Trichlorobenzenes	TRIBZ
Trichlorobiphenyls	CL3BP
Trichlorocyclopentene	TRIPT
Trichloroethylene	TRCLE
Trichlorofluoromethane	CCL3F
Trichloronaphthalenes	CL3NAP
Trichloronate	TCN
Trichlorophenols	CL3P
Trichloropropane	TCP
Trichloropropenes	CL3C3E
Trichlorostyrenes	TCST
Tridecane	C13
Triethyl phosphate	TEPO4
Triethylene glycol	TEGLYC
Triethylene glycol, methyl ether	TEGLME
Trifluoroacetic acid, 1,5-pentanediyl ester	TFAAPE
Trifluorochloromethane	CCLF3
Trihalomethanes	TRHMET
Trimethyl benzenes	ME3C6

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8.24 Test Name (Analyte)

ACCEPTABLE ENTRIES: (Cont.)

Trimethyl phosphate	TMP
Trimethyl phosphite	TMPO3
Trimethylbenzenes	TRIMBZ
Trimethyldecanes	ME3C10
Trimethylnaphthalenes	ME3NAP
Trimethylphosphonate	TMPO
Trimethylundecanes	ME3C11
Trinitrobenzene isomer	TNBISO
Trinitrotoluene isomer	TNTISO
Triphenylene	TRPHEN
Trithion	TRITN
Tritium	TRITIU
Tungsten	W
Turbidity	TURBID
Unknown compound, XXX = 001 thru 999.	UNKXXX
Unsymmetrical dimethyl hydrazine	UDMH
Uranium	U
Uranium 234	U234
Uranium 235	U235
Uranium 238	U238
Urea	UREA
Valeric acid	C5A
Vanadium	V
Vanillin	4H3MBA
Vapona	DDVP
Various hydrocarbons with increasing M.W.	VARHY
Vinyl acetate	C2AVE
Vinyl chloride	C2H3CL
Vinyl formate	VFA
Water	H2O
White phosphorus	WP
XXCC3	CC3
Xylenes	XYLEN
Xylenes, total combined	TXYLEN
Yellow dye	YELDY
Ytterbium	YB
Yttrium	Y
Zinc	ZN
Zirconium	ZR
Zirconium 95	ZR95

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13. ABSTRACT *(Maximum 200 words)*

This report reviews and evaluates database management systems which are currently being used for chemical and geologic data storage, retrieval, and processing. A review was also conducted of the Geographic Information Systems (GIS) and their use in coordination with different database and data formats. In addition to review and evaluation, the study consolidated information sufficient for inexperienced user access of the systems recommended by this study. The focus for this study is the Edgewood Area (EA) of Aberdeen Proving Ground.

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